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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

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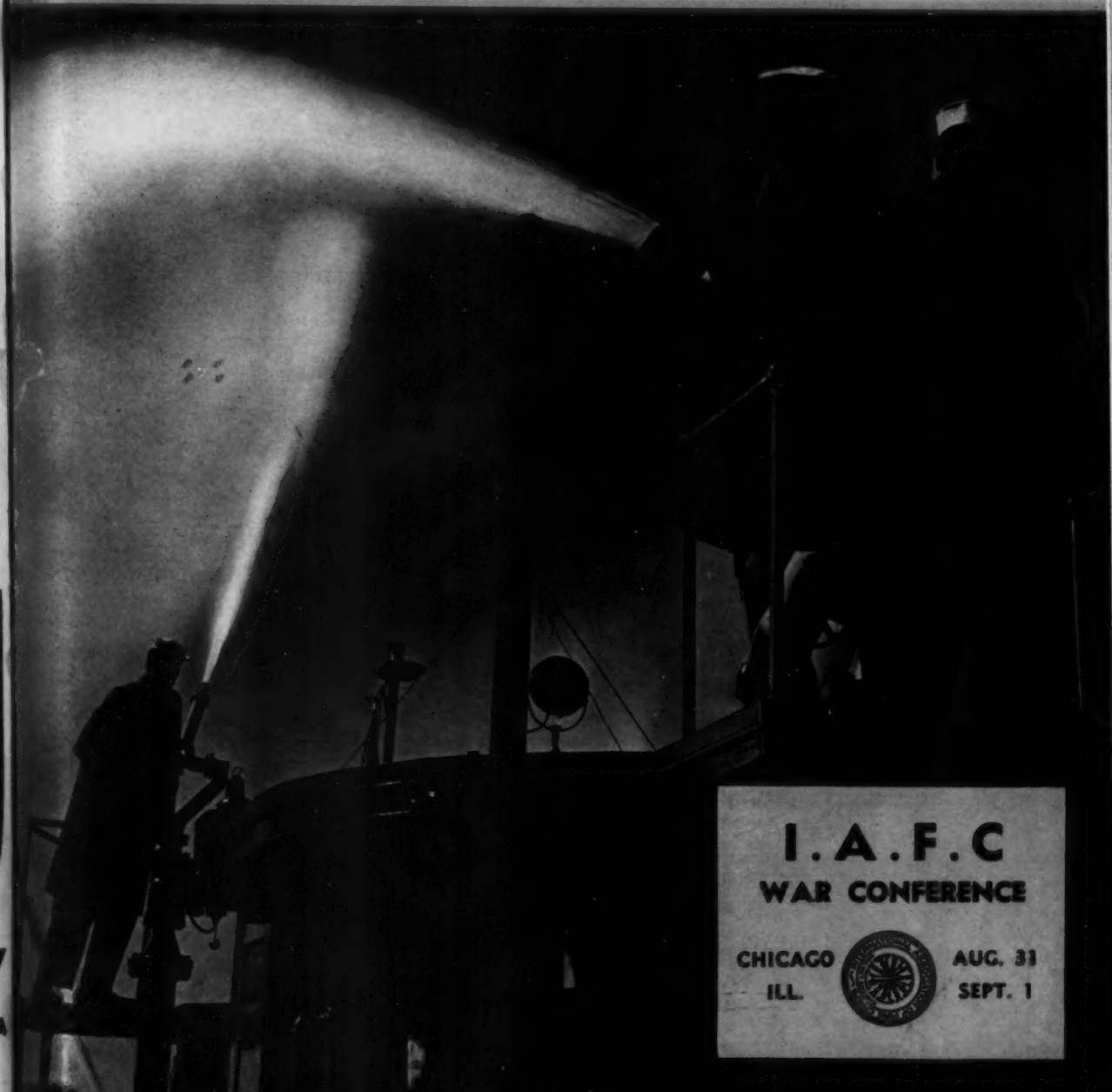
AUGUST, 1943

Vol. 96, No. 8



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OFTEN referred to as the finest rescue rig in the world, this hospital on wheels has the latest in all types of life saving equipment, including a dual Emerson Resuscitator.

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FEDERAL *Fury* Exhaust Whistle

The Fury is constructed of non-critical material.

The penetrating and powerful tone of the Fury Exhaust Whistle is unmistakable—it cannot be confused with any other signal now in use. It is the practical replacement for use in communities where vehicle sirens have been restricted to avoid confusion with air raid alarm systems.

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For those communities which do not prohibit the use of emergency vehicle sirens, FEDERAL can supply a wide variety of electric sirens.

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SIREN HEADQUARTERS

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FIRE ENGINEERING

A Consolidation of Fire and Water Engineering, The Fire Engineer and Fire Protection

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FRED SHEPPERD
Editor

A Record!

THIS issue of FIRE ENGINEERING establishes quite a record.

- It carries a considerably finer and larger volume of fire advertising than ever in all the sixty-six years since this magazine was established as "National Firemen's Journal" back in 1877. (There's scarcely a well-known firm in the fire field but that is represented in these pages.)

- It carries what is probably the most interesting and most helpful lot of editorial material we have ever managed to get between our two covers. You'll have to judge that for yourself.

- And it represents a field that today is more awake to its major importance and its great responsibilities than ever before in history, either in war or in peace.

- All in all, we hope you will find this issue of FIRE ENGINEERING all that it should be as a worthy mouth-piece of this great profession and industry.

The Publishers

FIRE ENGINEERING

The Journal of the Fire Profession since 1877; published on the fifteenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York 18, N. Y., also publishers of *Water Works Engineering*, *Sewage Works Engineering*, etc. ¶Subscription price U. S. and Latin America, $2 a year; Canada, $2.50; Foreign, $3; Single copies, 25c. ¶Member of Audit Bureau of Circulations and Associated Business Papers, Inc. ¶Entered as second-class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 3, 1879. ¶Contents of this issue copyrighted, 1943, by Case-Shepperd-Mann Publishing Corp. ¶KARL M. MANN, President; I. HERBERT CASE, Vice-President and General Manager; FRED SHEPPERD, Secretary and Editorial Director; W. J. GIBSON, Eastern Representative; WM. H. TOPHAM, Circulation Manager. CHICAGO OFFICE: W. S. CLEVENGER and L. M. ROCHE, 6 No. Michigan Ave., Chicago 2, Ill.; SAN FRANCISCO: CHARLES H. WOOLLEY, 605 Market Street, San Francisco 5, Calif.; LOS ANGELES: AUGUST HAURIN, 6000 Miramonte Blvd., Los Angeles 1, Calif. ¶Printed in U. S. A.

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LOOKING TO THE FUTURE . . .

PAST

In pre-war days Duo-Safety built a complete line of fire ladders for civilian use, including the famous light weight all-aluminum 500A and 700A Series.

PRESENT

Since war-time [illegible] prohibit the use of aluminum, Duo-Safety manufacturing facilities are now devoted principally toward building wood ladders for the war effort and restricted civilian use.

FUTURE

Plans for future ladder designs are now in the process of development, making use of such new materials as aluminum, magnesium, plastics, steel, etc. A glimpse into the future will be shown at the International Association of Fire Chiefs' Convention.

Industrial leaders looking ahead to rebuilding civilian markets and creating employment for millions of ex-service men are now planning a great post-war era for America. Outgrowth of this planning will be many new products [illegible] new materials [illegible] now processed with [illegible] and developed.

DUO Safety

Above is an illustration of Series 500A All-Aluminum extension ladder, which temporarily is not available at the present time due to the restricted sale of aluminum.

Shown above is a Solid Type ladder, Series EC-EFP-220, 227 and 228. This ladder is furnished in extension and roof ladders and is finished in olive drab as specified and used regularly by the United States War Department.

The above illustration is that of a Series 100 Duo-Safety Trussed ladder built in the conventional Weston style construction. This ladder is available in two section, three section, wall, and roof ladders.

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This chart has been used successfully by fire companies from coast to coast. You will find it valuable and important to you. If you do not now have one, or if you would like additional copies, write today to Eureka Fire Hose, Division of United States Rubber Company, Rockefeller Center, New York, 20. Your request will be filled promptly.

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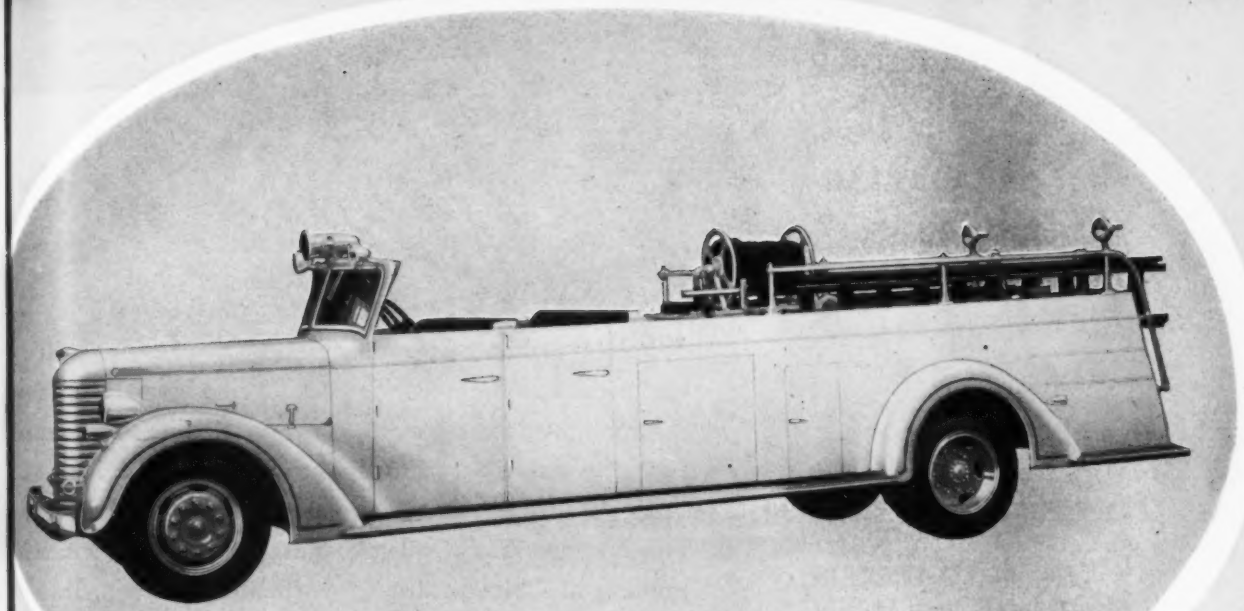

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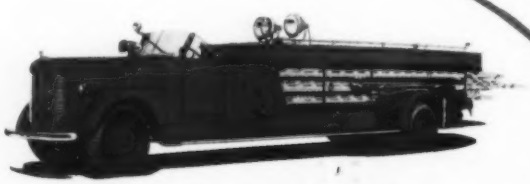

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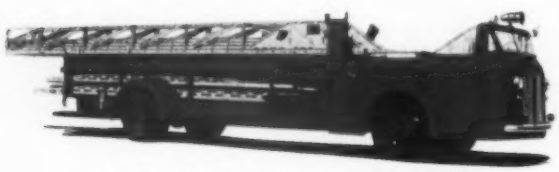

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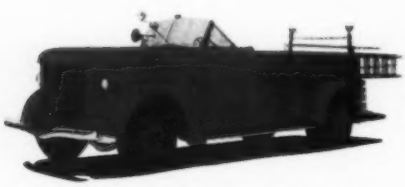

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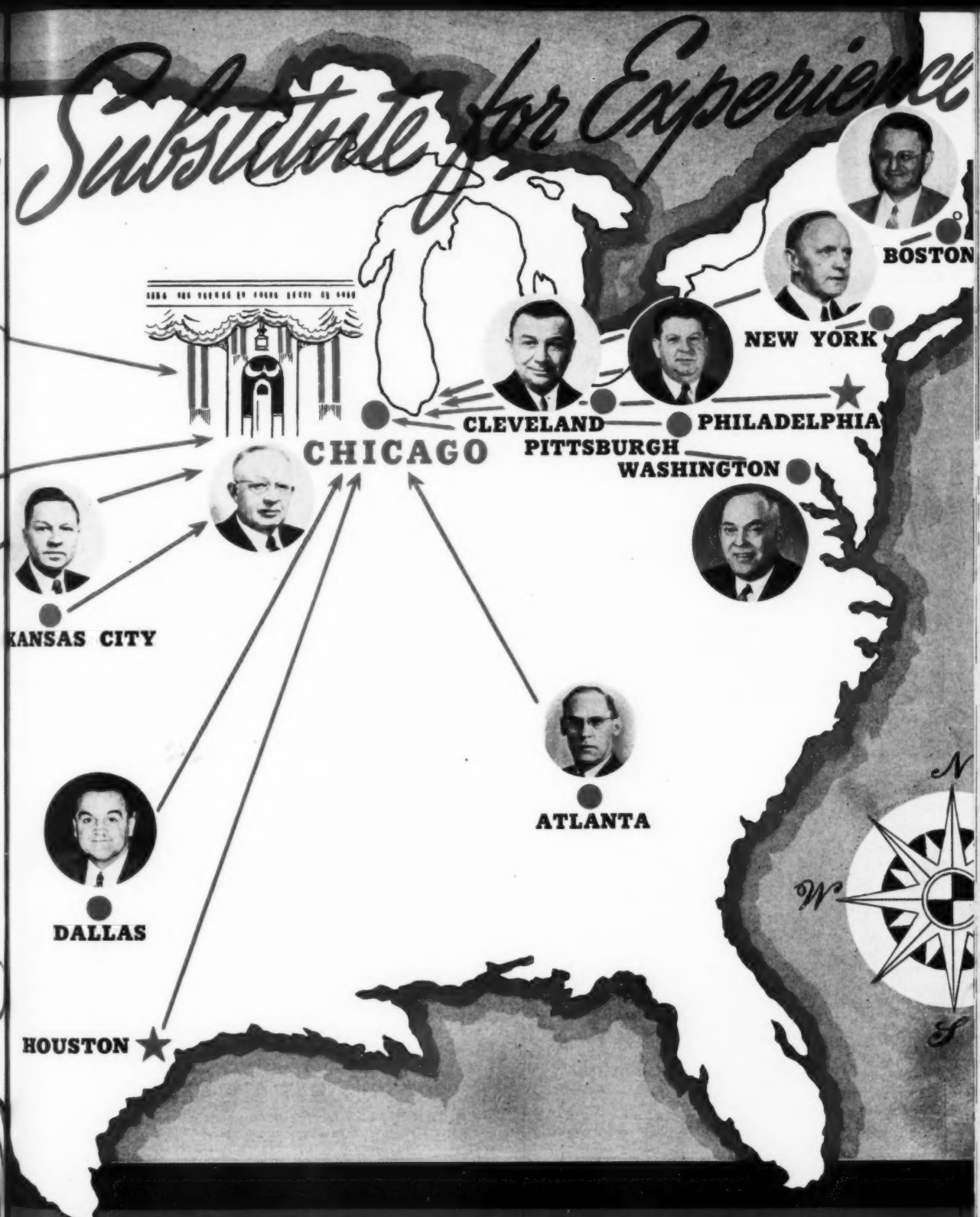

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TODAY'S EMERGENCIES!

SEE OUR DETAILED EXHIBIT at the International Association of Fire Chiefs' Convention, Palmer House, Chicago, August 31 to September 3.
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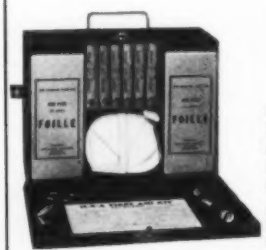

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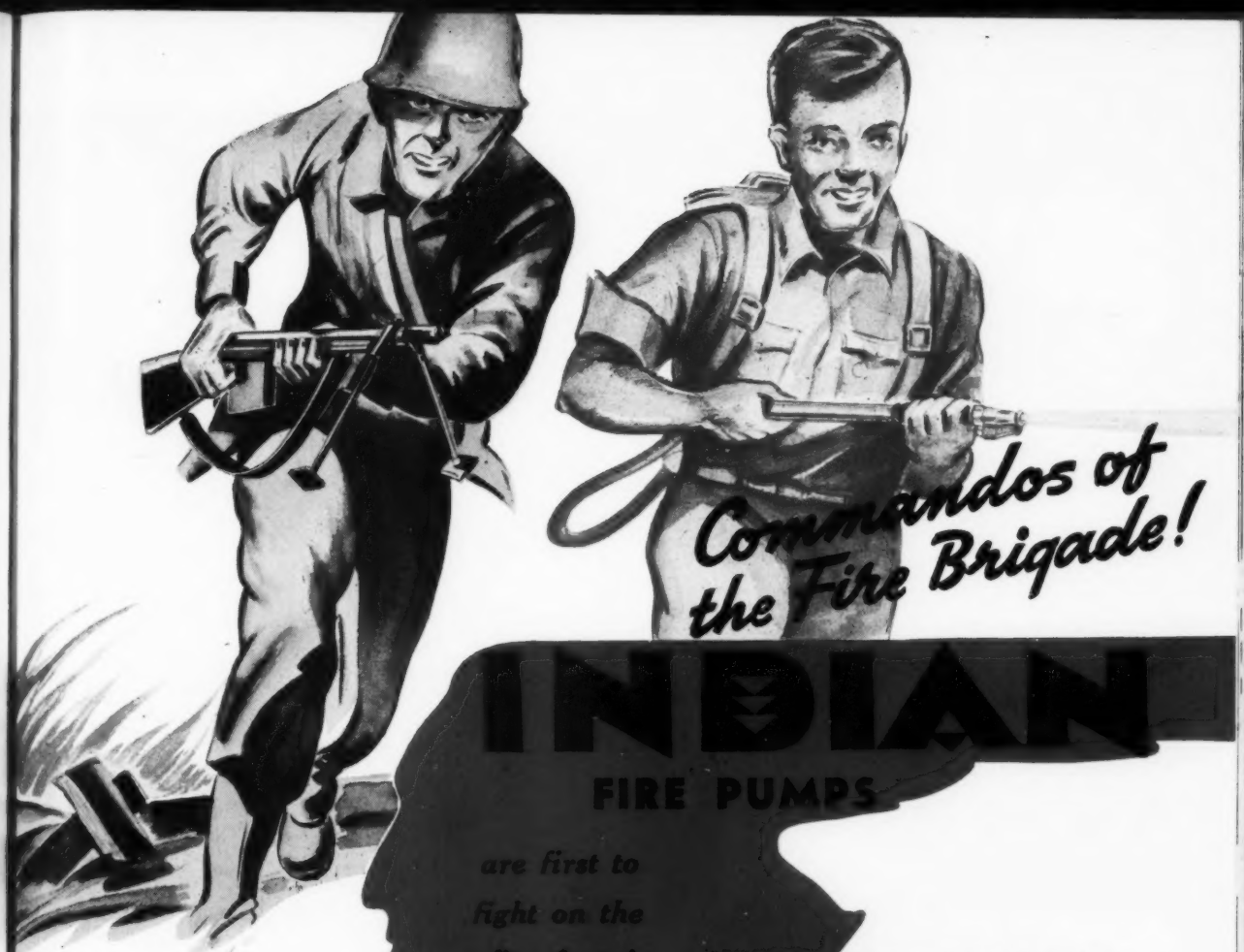

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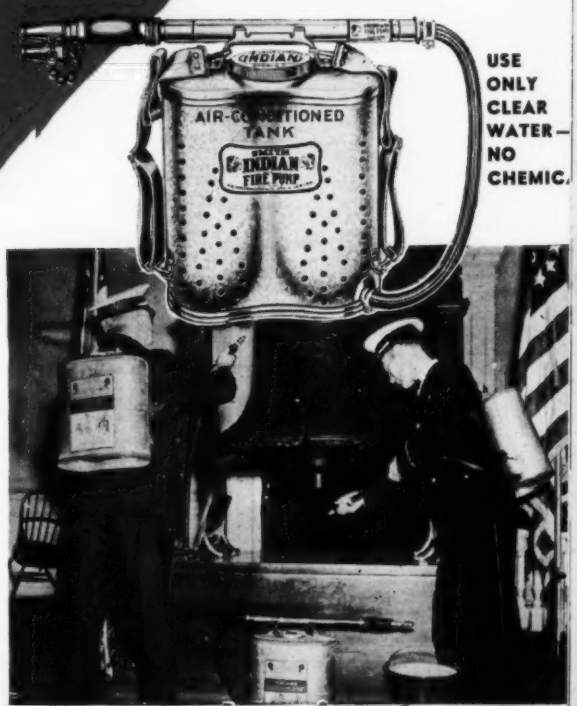
Go into action fast with these fire killers!

Just as the Commandos and Rangers smash the enemy, so do the men with *INDIAN* FIRE PUMPS smash fire. *INDIANS* have what it takes to finish off grass, rubbish, roof and building fires in a hurry. Penetrating strong stream shoots 30 to 50 ft. or nozzle may be instantly adjusted to a spray. Rust-proof 5-gal. tank carries slung on the back like a soldier's pack leaving arms free. Entire outfit is sturdily built for heavy duty. Solve the problem of reduced man power with more *INDIAN* FIRE PUMPS. Order now!



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A steel cutting tool of real efficiency and capacity . . . speeds rescues . . . easy to carry and easy to operate . . . always ready for instant use. Approved by leading fire chiefs throughout the country.

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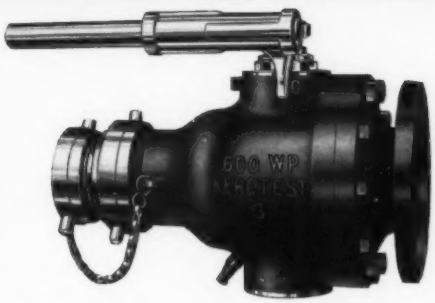

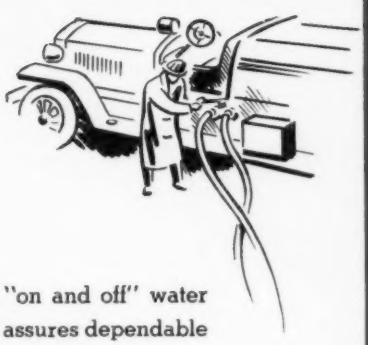

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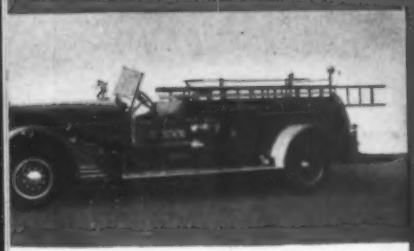

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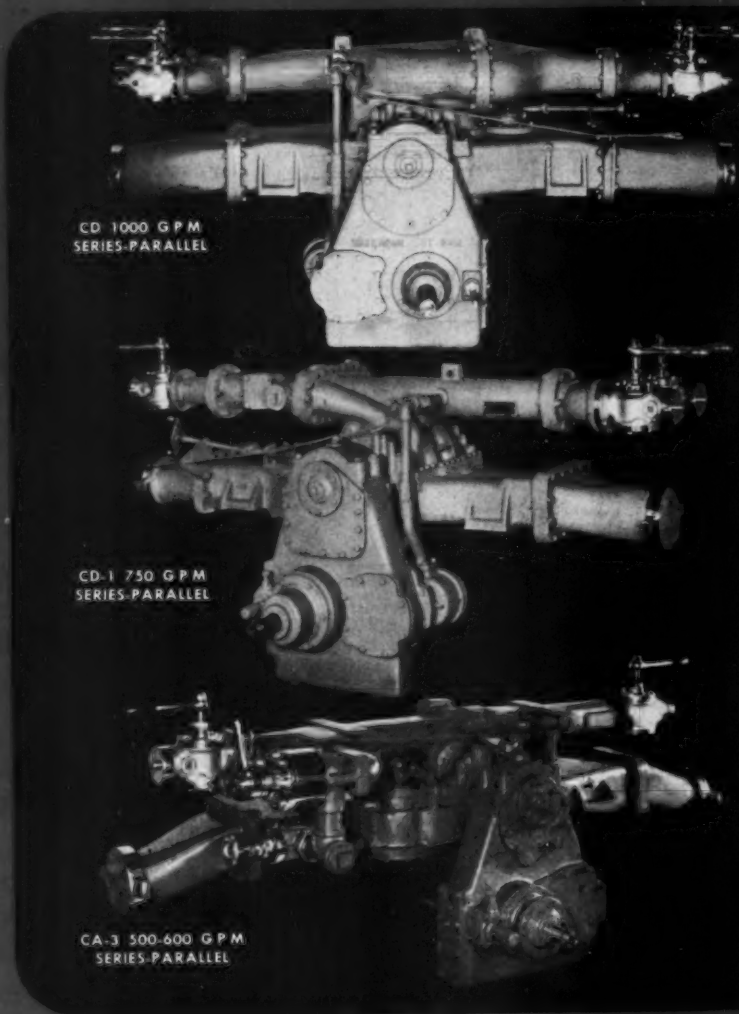

CD 1000 G P M
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CD-1 750 G P M
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CA-3 500-600 G P M
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Dependable

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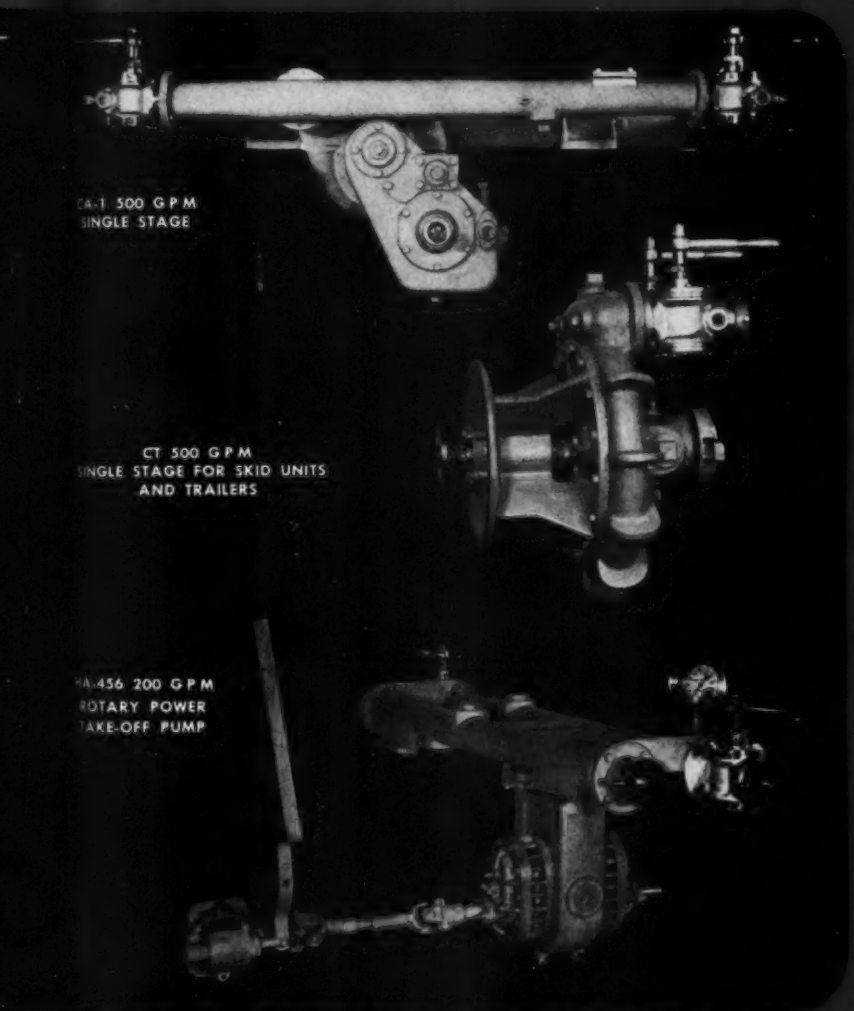

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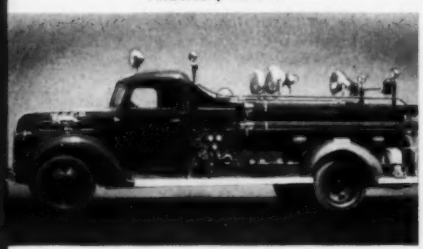

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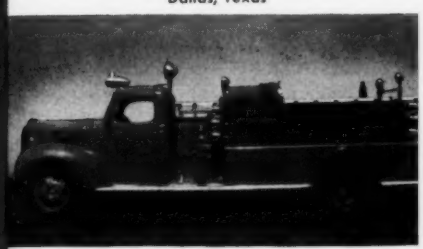

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Nozzles controlled, moved and discharged from within the cab by a convenient system of joy sticks.
Front Nozzle can be pointed up, down and side - to - side, from within the cab.
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When the complete story of the Cardox Airport Fire Truck can be told, after the war, executives of both airfields and factories will recognize its great significance. It is a new chapter in man's conquest of fire. This one, also, is written by Cardox.

Installed in industry's key plants all over a Nation tuned up to high production, Cardox Systems are *preventing* loss by fires. Cardox is guarding production, as our military forces guard America. But the Airport Fire Truck carries tons of low-temperature (low pressure) CO_2 to the spot where a fire is already gaining headway.

This fire truck projects its low-temperature Cardox CO_2, under complete control from the driver's seat, to beat down high test gasoline flames from above, to sweep the ground as it steadily approaches, to overwhelm the masses of blaze in rolling clouds of carbon dioxide vapor and snow. The frigid breath of Cardox cools down hot metal, minimizing loss —to make possible a quick rescue of occupants.

The quality of engineering that produced this truck, in close cooperation with aviation officials who keenly appreciated its value, is available, for production and property protection, to plants qualified for priority.

For further information, write, on company or department letterhead, for Bulletin 1983.

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How CARDOX Extinguishes Outdoor Fires

A discharge of liquid CO_2 into the atmosphere at ordinary temperature flashes to carbon dioxide snow and vapor at minus 110° F. Under Cardox methods about 45% of the liquid becomes snow and 55% vapor. The high percentage of snow in the discharge, and its relatively great density, are especially valuable in combatting outdoor fires. It is projected long distances, even in the presence of wind and fire draft — penetrates directly to the seat of the fire.

In direct contact with hot and burning surfaces, the snow becomes CO_2 vapor, pushing oxygen aside to create an inert, extinguishing atmosphere, and cooling hot surfaces to prevent re-ignition.

How CARDOX Extinguishes Fires In Built-In Systems

- *Timed discharges, as needed, through built-in piping systems . . . supplied instantly from a single storage unit holding tons of liquid Cardox CO_2.*
- *Mass discharge of Cardox CO_2 "knocks down" fire, by . . .*
- *Reducing Oxygen content of the atmosphere below the concentration necessary for combustion, and . . .*
- *Cooling combustibles and fire zone below ignition temperature . . .*
- *Extinguishing fire quickly, completely and entirely without damage from extinguishing medium.*

CARDOX

NON-DAMAGING FIRE EXTINGUISHING SYSTEMS

AMERICAN-MARSH PUMPS

Barton-American Again Leads the Field

Recent developments show that fog-foam systems, operated with high pressure pumps, are the most effective means of extinguishing gasoline and oil fires.

Barton-American engineers have developed a new centrifugal pump for operating at 500 pounds pressure to meet the demand for this new high pressure requirement on fog-foam systems.

Convert Present Apparatus Easily

Due to the adaptability of our new high pressure front mounted pump, it is possible for you to easily convert equipment you now have in service to high pressure fog-foam apparatus.

Looking forward to welcoming our old friends and meeting new ones at the Convention.

AMERICAN-MARSH PUMPS, INC.

CENTRIFUGAL, TURBINE, STEAM, AND POWER PUMPS

BATTLE CREEK, MICHIGAN . . . PUMPS AND PUMPS ONLY SINCE 1873

The CENTRIDRIVE FIRE TUG

With a Wallop of Over 3,000 Gallons Per Minute

★ 30 FT. OF EFFICIENCY PRICED WELL WITHIN YOUR REACH.

★ OVER 100 TUGS SUPPLIED TO THE U. S. COAST GUARD.

★ PROPELLED BY 4 CENTRIDRIVE DELUGE PUMPS, WHICH SERVE THE DUAL PURPOSE OF PROPULSION AND STREAM THROWING.

★ OVER 400 HORSEPOWER AVAILABLE AT THE TOUCH OF YOUR FINGER.

★ WATER FRONT FIRE PROTECTION AT LAST FOR THOSE THAT NEED IT MOST—MODERN METHODS AND BETTER ENGINEERING HAVE MADE THIS POSSIBLE.

CHIEF—It may be possible for you to obtain one of these Tugs, even during the war emergency—contact us for details.

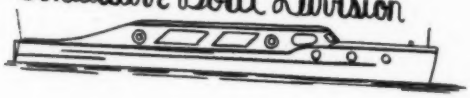
THE WAR AGAINST FIRE NEVER ENDS . . . . . .

Provide NOW for the FUTURE

It will help if you mention FIRE ENGINEERING *when writing advertisers*

HANLEY ENGINEERING SERVICE

Centridrive Boat Division



Prospect, Ohio

Dear CHIEF:

Are you wondering what this is all about? Well, you are entitled to an explanation. We are offering YOU a FIRE-FIGHTING UNIT like this - ONE THAT YOU CAN AFFORD.

We don't have to tell you, if you have a waterfront, that you can use a FIRE TUG. True, you never had one that would operate in shallow water, say 18 inches, and you never saw a boat that did not eat its weight in gold and - we might add - cost a king's ransom.

Uncle Sam was smart; he knew these things, too. The job of Fire Protection was given to the Coast Guard, who made possible the present design of the CENTRIDRIVE TUG. Over 100 units are serving the forces of the Coast Guard Fire Fighters.

Built into this TUG are many of the special features experience has found good. Along with this is a set up for production that makes it possible to serve you at a very reasonable cost - dollar per gallon less than you could purchase the equivalent gallonage in first-line land apparatus. NOW-is it clear just what is being offered?

During the war, it probably won't be possible for us to build TUGS for all who would like this type of protection. Some Priorities will be given - YOU may be eligible.

Remember, the CENTRIDRIVE FIRE TUG is built exclusively by the HANLEY ENGINEERING SERVICE, Prospect, Ohio, under our patents. Write us so that we can discuss your problems as they pertain to modern water fire-fighting.

Cordially yours,

K. Hanley

KH/lpc

P.S.:
We have some photographs and a descriptive bulletin on the performance of this TUG for your asking.

HANLEY ENGINEERING SERVICE

Centridrive Boat Division

PROSPECT, OHIO

BOOKS... For the Modern Fire Fighter

Recognized by the fire service as standard

FIRE SERVICE HYDRAULICS

A 254 page book, 185 illustrations, flexible Fabrikoid binding, by Fred Shepperd, Editorial Director of FIRE ENGINEERING.

Brings thoroughly up-to-date the subject of hydraulics as it pertains to every phase of fire-fighting — in simpler, more understandable and more complete form than ever. Not only that, it embraces, as well, many important new angles that have never before been covered anywhere. There are several brand new formulas, originated by Mr. Shepperd, and even old ones have been simplified or revised for greater accuracy.

"Fire Service Hydraulics" is a book every progressive fire fighter from the Chief down needs and should have.

Price $3.00 Postpaid

QUESTIONS AND ANSWERS FOR LIEUTENANT AND CAPTAIN

A 310 page book, fully illustrated, by Geo. J. Kuss, Former Deputy Chief, New York Fire Department, and Fred Shepperd, Editorial Director of FIRE ENGINEERING. Contains questions asked at promotional examinations in practically every city in the country where civil service examinations are held, with answers.

Includes chapters on Report Writing, How to Answer Examination Questions, Chemistry Examination Questions, Fire-Fighting Questions, Overhauling, Ventilation, Fire Prevention, Inspection, Evolutions, Drills, Use of Apparatus, Rescue Work, and in fact all the topics covered by the fire department promotional examinations.

Price $2.50 Postpaid

PROMOTIONAL STUDY COURSE FOR FIREMEN

By Fred Shepperd. Published in response to numerous requests from fire department officers and men working for advancement, this new book embraces the famous "Promotional Study Course" which ran serially in FIRE ENGINEERING during the past few years and proved to be so tremendously popular. Covering in chapter lessons most of the important phases of fire protection promotional study — mainly in questions and answers form — all of it is in the concise style generally used and preferred by civil service examiners.

To fire chiefs and other officials responsible for preparing examinations, this book will be found most helpful. And it is a mighty good reason, too, why fire officers and men should find it of inestimable value in studying for advancement.

Price $3.00 Postpaid

FIRE STATION DESIGN

In planning a new fire station, you can save time and do a better job if you have photographs and floor plans before you that show how such buildings embody the newer types of design and construction.

This book was prepared to provide such material, requested by numerous fire department officials throughout the country. Contains seventy-four pictures, diagrams, charts, and a wealth of helpful information and ideas. Should be consulted before you build any new station or remodel present ones.

Price 75c Postpaid

THE FIRE CHIEF'S HANDBOOK

By Fred Shepperd, in collaboration with the Educational Committee of the International Association of Fire Chiefs. There have been books on fire-fighting, but never anything so complete and authoritative as "Fire Chief's Handbook." This book, a gold-mine of practical, helpful data, gives a reliable, up-to-the-minute answer to almost every question that might come up in modern fire-fighting practice.

For progressive fire chiefs interested in up-to-date fire-fighting methods, the "Fire Chief's Handbook" will be a mighty valuable reference guide. It gives to ambitious fire department officers and men, in plain, understandable form, information that should prove extremely helpful in preparing for promotional examinations. In fact, it is a book every fireman needs and ought to have.

Price $4.00 Postpaid

Order Your Copies Now! Your Money Back If Not Fully Satisfied Within 5 Days

Case-Shepperd-Mann Pub. Corp., 24 W. 40th St., New York 18, N. Y.

Gentlemen: Please send me the following books:

"Fire Service Hydraulics" at $3.00..... ☐
"Promotional Study Course for Firemen" at $3.00... ☐
"The Fire Chief's Handbook" at $4.00..... ☐
"Questions & Answers for Lieut. & Capt." at $2.50.. ☐
"Fire Station Design" at $ .75..... ☐

Enclosed is money order (or check) for $....., or send C.O.D.....

Name..... Address.....

City..... State..... 8/43

Wartime

FIRE-FIGHTING ...EVERY CHIEF KNOWS ITS ADDED RESPONSIBILITY

THE ever-present menace of fire assumes even greater importance and magnitude with the added threats of incendiaries . . . sabotage . . . air raids. Trained men and the most modern of fire fighting equipment are needed more than ever before to wipe out even the smallest "blaze" before it reaches big-area proportions.

Obsolete, antiquated fire apparatus can hardly be expected to meet the extra demands for speed . . . power . . . traction . . . safety . . . dependability required in wartime fire fighting. Investigate modern FWD apparatus and its many advantages of four-wheel-drive power and performance in getting to fires faster—safer—under all conditions of road and weather.

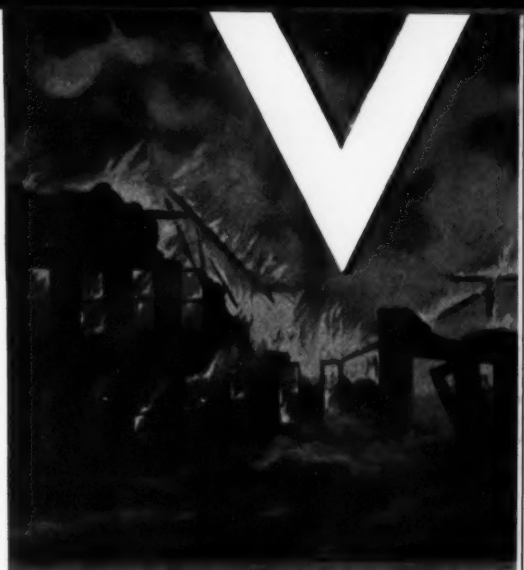
FWD fire fighting trucks are built in a complete line—all types, all sizes —with rotary or centrifugal pumpers in triple, or quadruple combinations in capacities of 500, 750, 1000 and 1250. They are backed by nationwide service facilities with replacement parts available at commercial vehicle prices.

THE FOUR WHEEL DRIVE AUTO COMPANY

Canadian Factory: Kitchener, Ontario

CLINTONVILLE WISCONSIN

FWD Model KSU 750-gallon triple combination pumper recently purchased by Salt Lake City, Utah. The new unit, equipped with five-man cab, is built on a 180-inch wheel-base and is powered by a 204-horsepower engine. Other equipment includes a 100-gallon booster tank and two aluminum ladders, 14 and 24 feet in length. The hose body has a capacity of 1200 feet of 2½ inch hose.



VICTORY OVER FIRE IS IMPORTANT, TOO

A number of serious fires have occurred in defense plants during the past year. Prevention of such fire damage is of the utmost importance to the defense effort. The purpose of the above poster, recently distributed by the Associated Factory Mutual Fire Insurance Companies to their insured industrial properties, is to call attention to fire's serious threat to production. Although emphasis is properly given to protecting plants against sabotage, the costly fires which have thus far occurred have been due to ordinary carelessness, inadequate employee training, or lack of necessary safeguards.—FIRE ENGINEERING, January, 1942.

FWD

FOUR WHEEL DRIVE

FIRE APPARATUS

***Built By the Oldest and Largest Four-Wheel-Drive Truck Manufacturer**

Two-way Gun furnished with or without gate.

Increased modern facilities mean better

EASTMAN

FIRE FIGHTING PRODUCTS

Due to the demand of the war effort, we have enlarged our plant and modernized our equipment in such a way that will enable us to serve you better in the coming years.

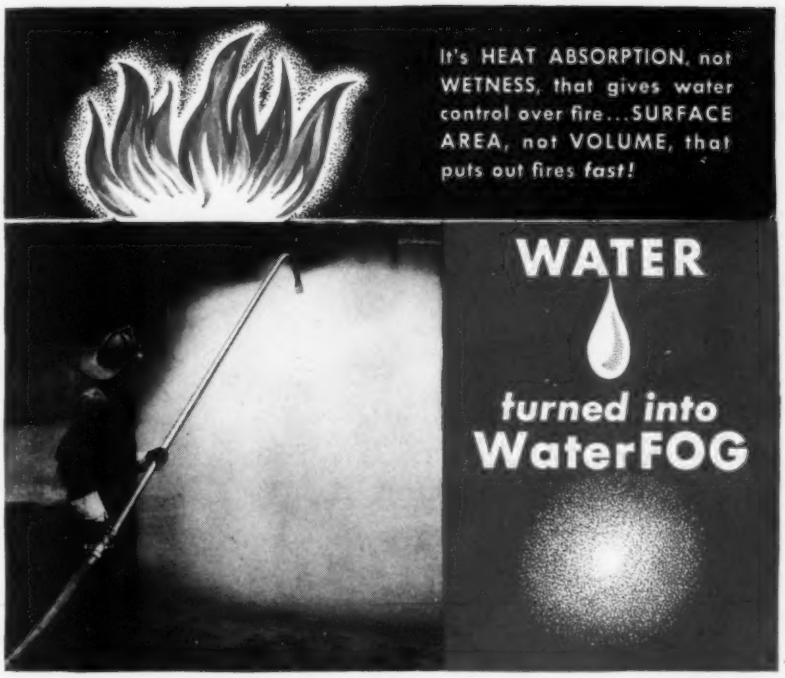
While we regret that in the present rush of government work your orders may be subject to some delay, we can assure you that with our improved facilities we will be in a better condition to fill your future requirements with a better and more efficient product, than we have ever been able to do before.

It is our ambition to go right on supplying fire departments with our fire fighting products, which have proven so effective in many years of active service.

★

NOZZLES ★ SIAMESE
ADAPTER FITTINGS
ETC.

SAMUEL EASTMAN COMPANY, Inc.
CONCORD, N. H.


It's HEAT ABSORPTION, not WETNESS, that gives water control over fire... SURFACE AREA, not VOLUME, that puts out fires fast!
WATER
turned into
WaterFOG

DOOMS EVEN OIL FIRES, FAST

You'll find in your physics book that speed of heat exchange increases with surface area exposed to heat. (That's the principal of the radiator and the refrigerating coil, too.)

By transforming water into tiny particles — much finer than spray — Rockwood WaterFOG nozzles multiply many times the total surface area of a given volume of water . . . thus making water (cheap, plentiful) your most efficient firefighter on flammable liquid fires!

In addition to *cooling* fires faster, WaterFOG particles, being light, stay longer in the combustion area, instead of plunging into the liquid, agitating it, inciting further vaporization. They float gently onto the surface, absorbing heat from the vapors and from the liquid — and then, turning into steam, they *expand*, smothering the fire!

"Flash-back" is prevented. Costly chemicals are saved. Water damage is lessened. Safe to use on electrical fires. Write for Bulletin 123.

3 WAYS TO PUT OUT FLAMMABLE LIQUID FIRES

1. **Quench the burning vapors**
2. **Lower liquid temperature to retard vaporization**
3. **Diminish supply of oxygen**

WaterFOG does all three . . . with water . . . faster!

WaterFOG is created by impinging streams from specially-designed Rockwood nozzles — engineered in correct particle size, fog pattern, and velocity for your conditions. Fixed piping installations, hose nozzles and applicators. Rockwood installations approved by Underwriters' Laboratories and Associated Factory Mutuals; used by Navy, Coast Guard, hundreds of industrial plants. *Executives!* colored movie (16 mm.) showing tests of Rockwood WaterFOG is available.

ROCKWOOD SPRINKLER COMPANY
54 Harlow Street, Worcester, Mass.
Specialists in Fire Protection Engineering, Equipment and Installation since 1907

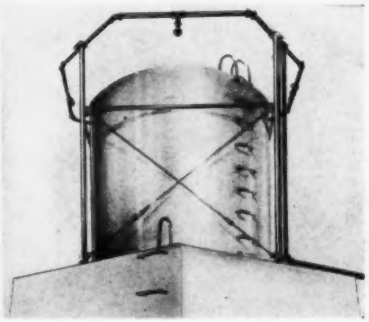
ROCKWOOD WaterFOG

Water Engineered by Rockwood Cools, Confines, Smothers Oil Fires

Complete Rockwood Fixed Piping Installation Protects Oil Storage

This drawing illustrates the use of a Rockwood-engineered system of WaterFOG fire protection — consisting of fixed piping, WaterFOG heads, valves, and automatic control devices.

In planning such systems, Rockwood engineers (authorities on hydraulics, as applied to fire protection) consider all factors involved in each hazard — spacing

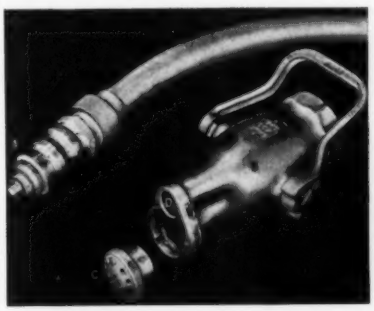


of heads, distance between heads and hazard, obstructions, etc. — in order to arrive at the most complete protection.

WaterFOG fixed piping installations are being used to assure both the prompt detection and the quick, automatic extinguishment of fires in fuel oil, kerosene, mineral spirits, and other flammable liquids. Typical WaterFOG-protected hazards also include quench and dip tanks, dryers, paint shops, transformers, electrical equipment.

Portable WaterFOG Equipment for Regular Fire Hose Lines

This photograph shows (A) WaterFOG applicator which discharges low-velocity WaterFOG in ball shape; and (B) SG-40 Nozzle to which applicator is attached.



With applicator removed and FOG Tip (C) inserted, SG-40 Nozzle will discharge either high-velocity WaterFOG with considerable forward projection, or from (D), a straight stream for attacking inaccessible places or rooting out deep-seated fires.

The 1½" SG-40 Nozzle takes 4' or 10' applicator; the 2½" size takes 12' applicator.

"*Semper Paratus*"

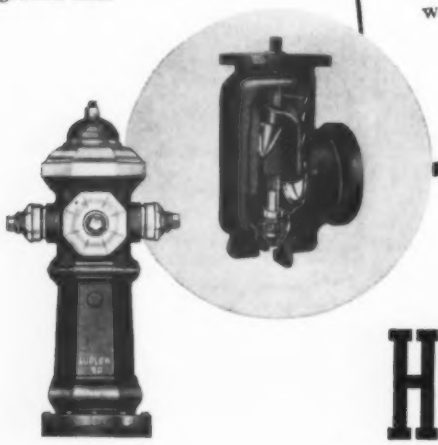
. . . THAT'S YOUR MOTTO, TOO!

Semper Paratus—Always Ready—the motto of the Coast Guard may well apply to the men who safeguard the water supply of America's cities and towns. Great war industries, the vast warehouses and docks, the homes of the worker and the man at the front must be protected from every danger—especially from destructive fires. The municipal organization that mans the water mains has a heavy responsibility these days—and is doing a grand job!

These dangerous days likewise prove the true worth of waterworks equipment. Ludlow Valves and Hydrants—because they were designed and manufactured to give rugged, persistent and efficient service—are serving faithfully today. Under priority permit, new Ludlow equipment and repair parts may be obtained and will be shipped with all possible promptness. Ludlow is always ready to serve.

THE LUDLOW VALVE MFG. CO., INC.
TROY, NEW YORK

LUDLOW HYDRANT CONSTRUCTION: Self-releasing 30° angle wedges and free-floating gates, self-adjusting to seats, afford smooth, trouble-free performance, long service. Opening and closing of hydrant automatically opens and closes drain, located at lowest point. Clogging is prevented. Gate is wedge-locked when closed, to prevent flooding. All working parts may be lifted through top of hydrant for easy inspection. Top and bottom bodies bolted together at ground line.



LUDLOW
HYDRANTS AND VALVES
SINCE 1866

From the time C-O-TWO originated the idea of using the tremendous pressure of carbon dioxide stored in cylinders and developed the now famous pressure operated release for multiple cylinder fire extinguishing systems, the development of new equipment has been a day in and day out task of C-O-TWO engineers.

NEW SQUEEZ-GRIP SAVES TIME AND GAS

C-O-TWO has scored again, by developing a C-O-TWO pressure-sealing valve. The release lever is directly over the carrying handle so that the valve may be easily opened or closed while carrying the extinguisher. No need now to set the extinguisher down to open or close the valve —there's no "handwheel" to be turned. The new SQUEEZ-GRIP releases carbon dioxide gas *as quickly as you can close your hand.* It's as fast as a Tommy gun and flattens fire in seconds without damage to materials or equipment.

C-O-TWO is a registered trademark and corporate name of this company. C-O-TWO is inspected and labeled by the Underwriters' Laboratories; approved by Factory Mutuals, and the Bureau of Marine Inspection and Navigation. To be safe specify C-O-TWO

C-O-TWO FIRE EQUIPMENT COMPANY

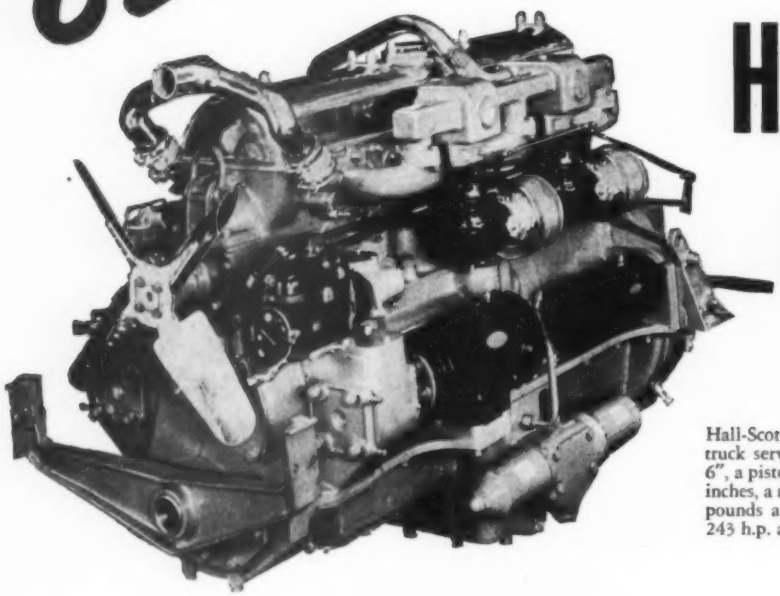
NEWARK, NEW JERSEY

Sales and Service in the Principal Cities of United States and Canada

GET THERE FASTER...

with a new

HALL SCOTT ENGINE!



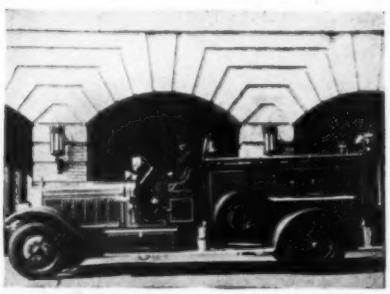
Hall-Scott Model 177 engine for fire truck service has 6 cylinders, 5½" x 6", a piston displacement of 855 cubic inches, a maximum torque of 735 foot-pounds at 1200 r.p.m., and develops 243 h.p. at 2200 r.p.m.

Save for their inability to hold high *average* road speeds, by accelerating quickly after each enforced slowdown, many pieces of old apparatus are still very serviceable in fire fighting. Repowered with modern Hall-Scott engines, such units will give you 1943 efficiency, at a fraction of the cost of new equipment.

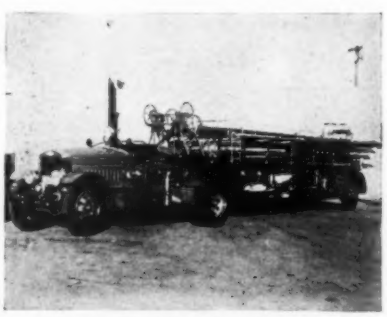
Designed especially for use in fire apparatus, Hall-Scott engines have unusual power in the lower engine r.p.m. ranges. This gives faster acceleration after every traffic slowdown, or corner rounded—saves precious minutes on the run to the fire!

Rugged and simple, the Hall-Scott engine will deliver its full horsepower for hour after hour if necessary. When servicing is needed, its unit-assembly design allows any given unit of the engine to be removed quickly, a substitute unit installed, and the apparatus returned to duty while repairs are made at the bench.

Hall-Scott has prepared a bulletin outlining in some detail the desirability of modernizing your older equipment by repowering. A copy is yours on request. Fire departments that once repower with a Hall-Scott engine, usually call for more Hall-Scotts to modernize other old units. They are also very apt to start specifying Hall-Scotts in any new equipment they may order. Let us know your requirements.



American LaFrance fire engine, owned by the city of Los Angeles, and repowered and modernized with a Hall-Scott Model 177 engine.



American LaFrance aerial truck operated by the Fresno Fire Department, Fresno, California, repowered and modernized with a Hall-Scott Model 177 engine.

HALL-SCOTT MOTOR CAR COMPANY

DIVISION OF AMERICAN CAR AND FOUNDRY MOTORS COMPANY

FACTORY AND GENERAL OFFICES: 2850 SEVENTH STREET, BERKELEY, CALIFORNIA

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MOTOR FIRE APPARATUS

MAXIM MOTOR COMPANY
MAXIM
MIDDLEBORO, MASS.

TODAY

we are engaged in 100% war work, doing all we can to play our part in getting this war over victoriouly . . . . .

TOMORROW

we will again return to the job of serving our many friends in the fire field with a completely new line of apparatus . . . .

★

MAXIM MOTOR COMPANY
MIDDLEBORO, MASS.

It will help if you mention FIRE ENGINEERING *when writing advertisers*

POWHATAN BRASS

is 100% Busy NOW, Putting the "INDIAN SIGN" on the Axis

But—WHEN IT'S OVER "OVER THERE" WE'LL BE BETTER ABLE TO SERVE YOU

POWHATAN Brass and Iron Works is 100% on War Production. We are concentrating all of our efforts on supplying our Navy and Ship Building Companies with necessary fittings that will enable them to do the job and win the Victory.

When the victory is won and we can again turn our efforts to supplying our Fire Fighters, you will have the benefit of the experience and efficiency we have gained through our war work. Until that time, WAR ORDERS have preference. If, however, you can obtain from the W.P.B. a high enough rating we can still furnish you with the same high quality—Shut-off Nozzles—Cellar Nozzles—Gate Valves—Male and Female Double Connections and Hydrant Connections and other Brass and Iron fittings which your Department may need.

Manufacturers of Equipment *Fire Department Since* 1892

REG. U.S. PAT. OFF.

POWHATAN BRASS and IRON WORKS

RANSON WEST VIRGINIA

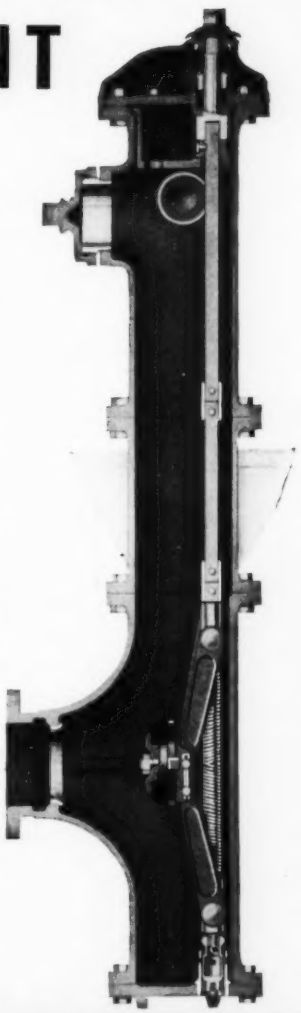
Phone: **93 Charles Town, Exchange**

RENSSELAER HYDRANT

(Known as the "COREY" until 1942)

With these important features:

1. **Dependable**—main valve cannot stick in closed position. Opens with pressure.
2. **Easier to operate**—works on powerful "knuckle joint" principle.
3. **Water quicker at nozzles**—area equal to valve opening obtained in only four turns. Full travel in 13 turns.
4. **More water at nozzles**—freedom from obstructions, plus long radius curves, means less friction loss.
5. **Nozzles can't pull out**—threaded-in (not leaded-in). Can't unscrew when coupling attached, due to reverse threading.
6. **No freezing at stuffing box**—completely protected from the weather.
7. **Caps easily removed**—free hanging chains. No binding.
8. **Nozzles free from obstruction**—caps hang away from nozzles.
9. **Pumper hose easily attached**—nozzles 18" above ground line. Room to swing spanner.
10. **No skinned knuckles**—pumper boss extra long.



RENSSELAER VALVE COMPANY

TROY *Offices in Principal Cities* NEW YORK

That hose is not *EXPENDABLE!*

No hose today is expendable. Every foot—every inch—of it is valuable. In many cases it is irreplaceable. No matter what make of hose you use, take care of it. Every department equipped with GOODALL Fire Hose is in an enviable position for the rugged dependability of 73 years of "know-how" that goes into every GOODALL product. This quality makes for extra long life under all conditions and, with good care and handling, will outlast many other brands.

More than just fire hose — the GOODALL lines includes finest quality chemical Engine and Booster Hose—Couplings—Nozzles, Gloves, Strainers—Coats—Boots and a well rounded rugged and dependable line of Fire Department Equipment.

GOODALL RUBBER COMPANY, Incorporated • Philadelphia • New York • Boston
Pittsburgh • Chicago • Government Department, Washington, D. C.
GOODALL RUBBER COMPANY of CALIFORNIA • GOODALL RUBBER COMPANY of TEXAS
WHITEHEAD BROS. RUBBER COMPANY • Factory: Trenton, N. J. (Established 1870)

Manufacturers of Industrial Rubber Goods

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GOODALL RUBBER COMPANY

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We shall appreciate your mentioning FIRE ENGINEERING *when writing advertisers*

ALBI-firepel "S"

REG. U. S. PAT. OFF.

effective insurance against fire hazard

ALBI-FIREPEL "S" is a fire retardant coating material designed to reduce the Fire Hazard of interior building surfaces of wood and other combustible materials. Protects against the intense, sustained fire.

TODAY...IT IS THE ONLY FIRE RETARDANT COATING MATERIAL ON THE MARKET WHICH HAS BEEN LISTED AND APPROVED BY UNDERWRITERS LABORATORIES, INC.

In their Fire Hazard classification ALBI-FIREPEL "S" reduces:

- ***Flame spread by 35%***
- ***Fuel contributed to combustion by 60%***
- ***Smoke developed by 85%***

FOR PROTECTION against extra hazardous conditions or as a caulking compound Albi-Firepel "S" can be supplied in concentrated form.

•

For complete information consult
your local dealer or write to

Albi Firepel Corporation
9 Park Place • New York 7, N. Y.

LISTED AND APPROVED BY
Underwriters' Laboratories Inc.
FOR PROTECTION
AGAINST FIRE HAZARD

Efficient fire departments, properly equipped, kept this destructive fire from damaging a big Pacific Coast shipyard, just across the street.

Crackerjack Fire Hose

Since 1905, Crackerjack Double Jacket Fire Hose has been recognized as the standard on the Pacific Coast.

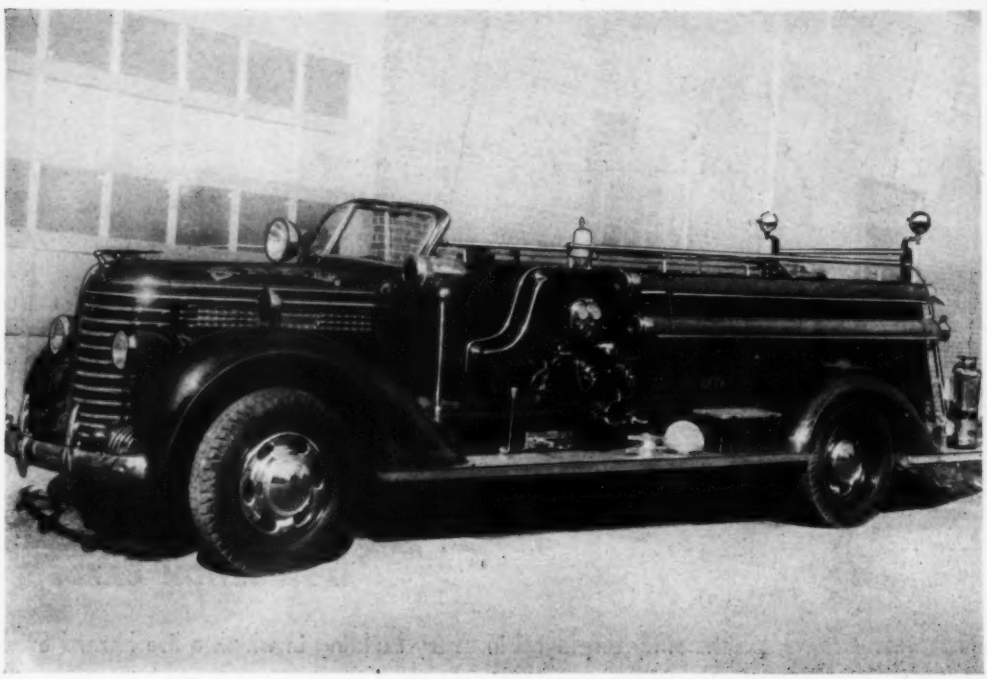
This recognition is based entirely on performance, a performance which, naturally, includes long life under the treatment which must be given fire hose on the job. Balance woven and lined with American's Precaution Plan hand-made hose lining.

The
AMERICAN RUBBER
Manufacturing Co.

Factory and General Offices:
Park Ave. & Watts St.
OAKLAND 8, CALIFORNIA

More than 35 years experience in the manufacture of rubber products.

MODERNIZE WITH OREN



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OREN

FIRE APPARATUS DIVISION

of Roanoke Welding & Equipment Co., Inc.
Roanoke Virginia

Established 1916

...—V...—

WHERE IS THE NEAREST FIRE ALARM BOX?

for FIRE USE THE NEAREST BOX NO.
AT
and wait for the Firemen
DO YOU KNOW THAT
600,000
fires occur annually in the U. S. A.
10,000
human lives are lost and
100,000
others are seriously injured and
$400,000,000
in property values plus the indirect losses creating a total waste in excess of One Billion dollars are annually destroyed by Fire
70%
of the fires — and life losses occur in dwellings
43%
of the commercial establishments destroyed do not rebuild, and the community loses prestige, business, payrolls, taxes and wages
50
times its original size is the spread of fire within 8 minutes after ignition.
WHEN FIRE OCCURS—
Use the Box IMMEDIATELY
Delayed Alarms are largely responsible for the excessive Fire Loss
The Box Is Your Best Protection
FIRE DEPARTMENT

"I would suggest that to ensure prompt and accurate transmission of fire alarms the public be thoroughly educated in the importance of knowing the location of the nearest fire alarm box and how to operate it."

--A Prominent Fire Chief.

USE FIRE ALARM INSTRUCTION CARDS

Instruction Cards prominently displayed in every building in which a life hazard exists will tend to increase "fire consciousness" in the minds of your citizens. Educate your citizens to understand that proper procedure when fire occurs not only protects the owner but also his neighbor, and by the conservation of materials and human lives will help win the war. Fire signaling facilities were never more urgently needed but materials for new equipment are limited and greater use should be made of existing boxes.

EDUCATE YOUR CITIZENS

(1) to become familiar with the location of the nearest box,
(2) to learn how to operate it, and
(3) to use the box immediately when fire occurs.

THE GAMEWELL COMPANY
Newton Upper Falls, Massachusetts

AUGUST, 1943

FIRE ENGINEERING

VOL. 96. NO. 8

With the Editor

Fire Guards The Office of Civilian Defense recently announced the formation of a new force of civilian fire fighters, to be known as Fire Guards.

The Fire Guards will have, as a nucleus, approximately 200,000 fire watchers who will be transferred to the new Fire Guard organization.

The purpose of the Fire Guards is principally to extinguish incendiary bombs dropped during an aerial attack. It will not be their function to operate on spreading fires.

During an aerial attack a great number of incendiary bombs are usually dropped. The majority of these represent no great fire problem because of the fact that they either fall at locations where they present little danger of starting large fires or else they drop at such points that quick action may extinguish them before they have had opportunity to involve surrounding combustible materials to any great extent.

The Fire Guards will not be expected to operate on any fire on which the services of the auxiliary firemen and regular fire forces will be utilized. Rather, their purpose will be to prevent the development of fires which might need the services of the skilled fire fighters and regular fire fighting apparatus.

Unlike auxiliary firemen, the Fire Guards will be trained to function independently of the fire department. However, they will have to look to the fire department, as did the auxiliaries, for instructors with the needed technical fire fighting experience. Of course this particular training will be on an elementary scale, for the Fire Guards will not be expected, as previously noted, to operate on spreading fires.

Though there is less chance today than in the past for air raids of any size, the development of the Fire Guard organization will serve as just so much additional insurance against heavy fire losses should large air attacks by the enemy ever become possible.

Any comprehensive course in training in fire fighting would seem unnecessary for this group because of the limited scope of their work. As it is planned to enroll numbers of women in the Fire Guards it is apparent that the guards will not be expected to do heavy fire fighting service.

Therefore fire departments, already overloaded with added responsibilities and, at the same time, seriously undermanned, should not be called upon to conduct any extensive training courses among the Fire Guards.

Single Jacket Fire Hose Elsewhere in this issue is published a symposium on experiences of fire departments with single jacket hose. As might well be expected, trouble has been encountered in its use. Bursting of hose and blowing of couplings have occurred far too often.

Some departments, as a result of these experiences, will not use the single jacket hose for regular fire fighting even though the OCD permits its use for this purpose. The risk is too great.

While we appreciate the urgent necessity of the fire hose industry turning out the maximum footage of hose to meet the enormous demand of Lend-Lease, our Allies, the Army, Navy, defense industries and cities, and while we know it takes twice as long for a loom to make fifty feet of double jacket as it does to make fifty feet of single jacket, it seems to us that supplying any but the fire departments in smaller municipalities with single jacket hose is poor policy.

For the use of long hose lines, or large nozzles such as deluge sets or deck guns,

which is common practice in the average city, means the inferior hose will be subjected to pressures beyond safe limits.

It seems to us that fire departments would be far better off if they were supplied with a limited amount of good double jacket fire hose than if supplied with twice as much single jacket hose which may burst the first time it is used.

Confusion on Sirens

The implied ban on the use of fire apparatus sirens resulting from an order issued by Lt. General H. A. Drum, Commander, Eastern Defense Command, Governor's Island, New York, on January 27, 1943, has caused no little confusion in eastern seaboard states.

The order states: "False Blackouts or Air Raids—No person shall order, utter, publish, sound, or otherwise simulate or cause to be ordered, uttered, published, sounded or otherwise simulated, any air warning signal unless ordered or authorized to do so by the fighter command or, in the case of practice blackouts or practice air raids, as authorized by the service command, or for the testing of air raid warning equipment on Saturdays between twelve (12) o'clock noon and five (5) minutes following, as authorized by the civilian defense authorities."

On February 19 a statement was made by the Assistant Adjutant General of the Eastern Defense Command, relative to the order, as follows: "Although paragraph 45 of the new Air Raid Protection Regulations effective February 17, 1943, for the Eastern Military Area do not specifically prohibit the use of sirens for other than air raid warnings, their use must be so governed that there can be no confusion with the BLUE and RED public air raid warning signals."

The failure to make a clear-cut explanation of the order has resulted in a variety of interpretations of it in different sections of the area. In the New England states it is held that fire apparatus sirens do not simulate the sound of air raid warning signals, and therefore their use is quite general in that part of the area. Some cities in other states in the Eastern Defense Command hold a similar view, while still others interpret the order as a direct ban on the sirens, and observe this interpretation.

It seems to us that there is no danger of the sound of the fire apparatus siren being mistaken for an air raid alarm, for the public has been thoroughly accustomed to the former through its years of use. Furthermore, it would be hard to confuse the sound of a siren on a moving fire truck with the slowly undulating sound of a stationary air raid siren.

We believe the use of the siren on apparatus should be permitted without restraint. In fact, its use is imperative as a safeguard to fire apparatus and as a means of maintaining safe, rapid response to alarms.

Fred Shepperd

Navy Yard Fears No Fire

California Installation Protected by Well Equipped and Trained Force

By BOB GREENOCK

MARE ISLAND Navy Yard, located in California, and one of the important military installations on the Pacific Coast, is protected from fire by a most adequate and complete fire department, one that would bring a gleam of pride to the eyes of any fireman.

Equipped with plenty of completely modern apparatus and manned by experienced men schooled not only in the conventional fire fighting methods but in special methods for fighting ship fires, the Mare Island Fire Department stands ready to combat any incipient conflagration that may develop.

Chief of the department is J. D. Greig, who received his fire fighting experience as head of the fire prevention and fire fighting forces of the Shell Oil Company. He has been in the business for more than twenty years.

George Munckton, assistant to Chief Greig, has been on the force at Mare Island for fourteen years, and received his initial training in the Seattle area. Other members of the Mare Island force, recruited from civilian ranks, include Battalion Chiefs George Herald, formerly head of the Glendale Fire Department, and William Will, the latter with the Mare Island group for fifteen years; two inspectors, Everett A. Bennett and Frederick J. Kreis, former captains in the Los Angeles Fire Department, and several members of the Grass Valley Fire Department who, after entering defense work at Mare Island, were drawn into the fire force.

A specialized course in fighting fire aboard ships is given at the Mare Island Fire Fighter's School. This school is operated for the express purpose of instructing commissioned and enlisted Navy personnel, however, and functions separately from the Mare Island civilian force.

Further training and drilling of the department personnel is accomplished through a school held one evening a week for each platoon at which time the chosen subject is explained and rehearsed.

Men on the regular Mare Island Fire Department work twenty-four hours, then are off for twenty-four. Like in Chicago and other cities employing the twenty-four-on, twenty-four-off system, they change watch at 8 a.m. each day.

Modern Fire Alarm System

The fire alarm system is a Gamewell system consisting of a large number of alarm boxes strategically distributed about the island and divided into seven fire alarm districts on the island. All boxes are two or three number boxes; recording tape registers and bells are located wherever persons directly concerned in immediate response to fire alarms are stationed.

Fire alarms are received either by the fire alarm system or telephone.

Fire inspections at the yard are supervised by the assistant fire chief, assisted by a battalion fire chief who is directly in charge of seven fire inspectors. They look for all hazards, report them or any deficiencies found.

A salt water system is the main source of supply. Water, an inexhaustible supply from the Bay, is pumped into the mains at four locations to supply the hundreds of hydrants. There are also a number of fresh water hydrants in locations where parallel systems are required or where there is no salt water available. Fresh water is piped to the yard in two separate locations from two different sources. In addition, there are also reserve supplies of fresh water in tanks in the Yard from which water can be pumped or flow by gravity. Salt and fresh water hydrants are painted different colors to distinguish between them.

Every ship, shop and building is equipped with auxiliary equipment such as hose, trailer pumps, buckets, sand, ladders, axes, chemical extinguishers and to each such piece of equipment are assigned men to handle it. Should additional help be required in fighting a fire, these ship or shop details and a detail of men from the Marine Barracks would augment the regular fire fighters.

In addition, the Coast Guard has several water-borne craft in the vicinity and men from its Fire Fighting Battalion are available. There is also a mutual aid agreement with the Vallejo Fire Department. Finally, there are other small towns nearby which could furnish land equipment, if necessary, while all the nearby oil refineries maintain fire fighting crews and fire boats.

However, there is little likelihood of a call for much outside assistance because of the tremendous supply of equipment and manpower on the island.

Prepared for War Emergency

In event of an air raid, special plans have been made to cope with any situation that might arise. If at night, all blackout regulations would be observed, but that would be no handicap to the Mare Island fire fighters for they know every inch of the island by heart. During air raids the fire department responds only on orders from the Command Center and with apparatus as directed.

All men in the department have thorough knowledge and ability to operate all fire fighting, rescue and salvage equipment. Often they are detailed as escorts and standbys when explosives or flammables are being moved or handled.

Fire fighting apparatus used by the regular department is of several types and distributed to the several stations located at strategic points on the island.

Proudest possession of the Mare Island Fire Department is its new hydraulically-operated 100-foot aerial ladder truck, one of the few on the West Coast. In addition, this truck is equipped with 210 feet of ground and roof ladders, a 100-gallon water tank and a 125 g.p.m. booster pump, 900 feet of 2½-inch hose, chemical hose, a 1250-watt generator with floodlights and extension cords and much miscellaneous rescue, salvage and other equipment. This truck is an American La France.

Pumpers used range in capacity from 550 to 1250 g.p.m., carry 1000 to 1500 feet of 2½-inch hose, a complement of

Mare Island's New Fire Boat

Mare Island's Fire Chief, J. B. Greig

ladders and small equipment. All are fitted either with a water tank and booster pump or chemical tank and line; several have mounted or portable monitor nozzles for handling high pressure streams. Among the pumpers is a Pirsch quadruple combination. The other pumpers, all triple combinations, are either American La France, Seagrave, Mack or Pirsch.

A number of chemical engines are in service, all of them special jobs and mounted on Mack, Ford or Chevrolet chassis. All have water tanks and booster pumps in addition to foamite and CO2 chemical equipment. Each carries a complement of ladders and minor equipment and several are equipped with 2000-watt lighting units, complete with floodlights and extension cords.

The Pirsch quad carries 225 feet of extension, straight frame and roof ladders, has a 750-g.p.m. pump, a 40-gallon soda and acid chemical tank with 100 feet of chemical line, carries 1000 feet of 2½-inch hose and other equipment.

The Mare Island Fire Department has water-borne apparatus too. For example, there is the 40-foot motor launch driven by a 105-horsepower diesel engine. It is equipped with two 500 g.p.m. centrifugal pumps, a fire fighting mast on which is mounted a monitor nozzle capable of handling 1500 g.p.m., a portable monitor nozzle, 1000 feet of 2½-inch hose, and 450 feet of 1½-inch hose.

In addition to salvage gear and minor equipment, the water-borne craft carries a foamite generator and powder, ladders and a 2000-watt lighting unit.

This particular fireboat is new and was specially constructed and designed for waterfront fire control at the island.

Between the regular department with its modern equipment and the great amount of auxiliary equipment and manpower available, Mare Island is excellently equipped to cope with fire of any kind under any circumstances.

U. S. Navy Official Photograph

One Hundred Foot Aerial Truck in Service at Mare Island Navy Yard and Some of the Firemen

Ammonia Mixer

Ammonia refrigerating plants in New York, usually of large capacity, may be equipped with an emergency device, for the purpose of mixing the ammonia with water and discharging it into the sewer in case of fire. This device is commonly known as an "ammonia mixer". The Fire Department will have sole use of this device and supply the emergency water.

The purpose of the "ammonia mixer" is to reduce excessive pressure that might be generated in a refrigerating plant by heat due to a fire.

Operating instructions are as follows:

1. When necessary to operate the "Ammonia Mixer" Officer will open door of box by using key.

2. Stretch a line or lines (according to inlet size) and connect either to single or siamese connection, whichever is provided and marked "To Ammonia Mixer".

3. Maintain on the pumps of the engine or the hydrant, the pressure and gallons flow shown on the following table:

2½-Inch Hose

Inlet Size	Number of Lines	Pressure on Engine or Hydrant	Gallons Flow
1¼ inch	1	15 lbs.	75
1½ or 2 inch	1	45 lbs.	300
2½ inch	2	55 lbs.	690

3-Inch Hose

1¼ inch	1	10 lbs.	75
1½ or 2 inch	1	25 lbs.	300
2½ inch	1	75 lbs.	690

It is assumed that the average length of line required will be about 150 feet. When the length of line used is shorter or longer, Officers will decrease or increase the pressure in order to deliver as near as possible the quantity of water specified in table.

4. After the water has been started, open wide the valve controlling the flow of ammonia to the mixer.

5. Water must be supplied constantly until there is no fire or heat in the immediate vicinity of the refrigerating pipes or machinery and during such time as the emergency valves are open.

Precautions to be observed follow:

1. The ammonia valves must not be opened before a constant flow of water is running and the water must not be shut off before the ammonia valves are closed. If ammonia valves should be opened without an adequate supply of water, free ammonia would enter the sewers and probably asphyxiate persons on the street and in adjacent buildings.

2. Do not operate the emergency device unless the heat or fire is in direct communication with the refrigerating pipes or machinery.

3. The emergency device must not be operated where there is merely a leak or break in the pipings of the plant.

4. Officers in command of fires in refrigerating plants or in close proximity to them shall use this device only when, in their judgment, danger of excessive pressure is being built up by fire in close proximity to the pipes or machinery. Unnecessary operation of this device would cause great inconvenience to the owner through loss of ammonia.

OCD Curtailed

To meet the reduction made by the Congress in the requested appropriation of the Office of Civilian Defense, steps in the curtailment of its activities have already been effected and over 200 employees have been notified that their services have been terminated as of July 15.

The Organizations Service Division of the Civilian War Service Branch, including the Office of the Chief, the Community War Information Section and the Program Services Section, has been abolished. This means that the Office of Civilian Defense will no longer render any service to the approximately 60,000 Victory Speakers who have been organized by State and local councils of defense, Director Landis explained. Nor will it continue to render any service to locally organized discussion groups or centers for war information that the various communities have established, he added. In the field of motion pictures, the abolition of that section will mean that State and local defense councils can expect only an extremely limited number of training films. The radio script exchange service for local communities is also abolished.

Drastic curtailment in staff and field operations of the civilian war services as a whole has been effected, Director Landis announced. He expressed the belief, however, that leadership and direction can still be given to the 4,000,000 volunteers engaged in activities in the 12,000 local defense councils throughout the nation.

Employees whose services are terminated are greater in number in Washington than in the field, officials reported.

Chief Fred Higgins to Retire

Fire Marshal Fred P. Higgins of the Grand Rapids, Mich., Fire Department will leave the department on September 7, when he reaches the retirement age.

Records of the department show Chief Higgins has had nearly fifty years of service.

He will be succeeded by Assistant Marshal Edward C. Palmer.

Nine Firemen Killed When Floors Collapse at Chicago Fire

Falling Roof Carries Floors and Stairway to Basement; Firemen Operating on Stairway Trapped

NINE members of the Chicago Fire Department lost their lives on July 9 at a fire in an old four-story brick building, when the roof of the structure fell and carried the floors and stairway below to the basement. Those killed were Captain Arthur Barcal (acting Battalion Chief), Captain Henry Wurthmann, Lieutenant Edward J. Moffett, Captain Matthew McDonough, Fireman Robert Walsh, Fireman Richard Jablonski, Fireman Thomas McCarthy, Harry Weinel of the Fire Insurance Patrols, and Fireman Joseph Strenski.

Two fires occurred in the structure. The first fire started at 8:30 p.m. on Thursday, and was extinguished by the Department. Then on Friday, when refuse in the basement of the building next door was ignited, a defective chimney threw sparks through a hole in the wall of the fire building and started a new fire. Investigators, when checking up on the cause of the second fire, kindled a fire in the incinerator of the building next door and observed the discharge of sparks through the defective chimney and through the standing wall of the burned building.

The second fire was discovered at 1:50 a.m. on Friday, and a four alarm summoned thirty fire companies and 160 men to the scene.

Firemen started stretching lines up the stairway, which ran along the east wall of the building. There were men on each of the four stair landings, about twenty in all, handling the hose. Adelbert White, Chief Fire Marshal of the First Division, who was in charge of both fires, stated that he was on the stairs at the second floor level when he had a premonition that something was going to happen. He ran up the stairs ordering all men out. When he neared the landing on the fourth floor, the collapse came.

The roof fell in, sending timbers crashing down upon the stairway which gave way. The men fell with it, and many of those on the lower floors were plunged into the basement beneath the debris. Chief White was pinned beneath a plank, but was released by a fireman and made his way to safety through the front door of the building.

Fire Commissioner Michael J. Corrigan arrived and took charge of the rescue efforts. A survey of the front wall of the building which was cracked and bulging indicated that rescue operations would have to be carried on under extreme hazard. However, the condition of the structure did not hamper the heroic work of the Chicago Fire Department members in effecting rescue of those buried beneath the debris.

The Building After Floors Collapsed, and After Part of Front Wall Had Fallen In

Difficult to Reach Bodies

It was apparent that removing the fallen timbers to release those trapped through the front of the building might further endanger the trapped men. Also, the rescuers feared that any more tampering with the upper structure might bring it down, so all hose lines except one used to prevent fire breaking out were shut off. Commissioner Corrigan ordered holes drilled in the basement wall with air hammers. Another hole was cut into the basement from the front through a sewer, but it was impossible to remove the dead and injured through either of these openings, because of the danger of causing further collapse of the wreckage. It was necessary to work through a front window on the ground floor and lift away the debris a piece at a time in order to get at the men inside. Meanwhile part of the north wall of the building, at the fourth floor level, had caved in, further impending rescue work.

Because of the large quantity of the debris precipitated into the basement of the structure, it was not until nearly six hours after the building had collapsed that the first body was removed. Thereafter one by one the bodies were extricated. A number were gotten out alive and survived the ordeal, while others died after removal to the hospital.

The burned building was occupied by the H. Piehl Transfer Company, the Wilmer Snow Co., a light fixture concern, and the Joe Ott Manufacturing Company, makers of model airplanes. The Ott Company used the fourth floor as a storage place for cartons in which the model planes were packed.

Russell Mansfield, Chief Inspector, City Department of Buildings, said that the structure was inspected last in January, when the lower two floors were devoted to light manufacturing and the upper two were vacant. The inspectors estimated the weight of supplies and equipment on the occupied floors of the building and compared the loading per square foot with the floor load chart. The floors were found to carry loads well within the city requirements.

Floor Loaded Beyond Legal Limit

However, investigators Paul Gerhardt, Jr., Commissioner of Buildings and Thomas Gary, Commissioner of Sewers, ascertained that in the fourth floor storage space used by the Ott Company at the time of the fire, the load was approximately 125 pounds per square foot, which was in violation of the rules and regulations limiting the floor to forty pounds per square foot. The company reported that it had on hand 350,000 bundles of airplane cartons stored there, and Gerhardt estimated that with 300 cartons to the bundle the amount totaled approximately 125 pounds per square foot.

It is believed that the water discharged on the materials at the Thursday fire, plus that which was added at the fire on Friday so badly overloaded the floor as to cause a bulging of the walls. This in turn caused the roof beams to slip from their supports, permitting the roof to drop. In addition, the roof and floor beams had been weakened due to the fire.

For a city the size of Chicago, and with its unusually rapid growth, the number of fires which have resulted involving heavy loss of life are comparatively few. The list since 1871, the date of the Great Chicago Fire, includes the following:

October 8-9, 1871. The great Chicago Fire, which cost 200 lives, destroyed 17,450 buildings, with a money loss of $168,000,000.

July 10, 1893. Seventeen persons killed while 30,000 visitors in the Columbian Exposition watched when fire destroyed the Cold Storage Building on the fair grounds, now Jackson Park.

December 30, 1903. The Iroquois Theatre fire, in which 575 lives were lost.

January 20, 1909. Sixty workmen were burned to death or drowned when fire swept a temporary water intake crib, halfway between the Edward F. Dunne crib and the shoreline at 68 Street.

December 22, 1910. Twenty-four men, including a fire marshal, were lost when fire destroyed the Morris & Co. packing plant at the Stock Yards.

April 18, 1924. Nine firemen and one civilian perished when a wall collapsed in the Curran Hall fire at 1363 Blue Island Av.

April 13, 1931. Eleven lives were lost when fire and gas trapped workers in an intercepting sewer tunnel at Cermak Road and Laflin Street.

May 11, 1934. One killed in a $4,617,000 fire which swept the Stock Yards.

September 30, 1935. Ten killed when the owner, in order to collect insurance, set fire to his grocery store at 558 W. Taylor Street over which the victims lived.

June 16, 1941. Three firemen killed at the Chicago Mill & Lumber Co. plant, 940 N. Ogden Avenue.

January 5, 1943. Six died in fire which swept a bowling alley at 9354 S. Ashland Avenue.

More Radio for Fire Service

On January 23, 1943, James M. Landis, Director of the U. S. Office of Civilian Defense, realizing the need for more adequate communications facilities in the fire service, particularly with the establishment of fire control centers in which the nation's fire service was being mobilized for mutual aid and, realizing also that many of the rural fire departments and fire control centers would be without any type of wire communications, directed a letter to the Federal Communications Commission requesting that the rules of the War Emergency Radio Service be amended, so that the radio service could be utilized and made available to the fire service.

It was also realized that, in view of the fact that fires may be started through sabotage but without leaving any trace of such sabotage, the regulations, as they applied to the scope of service, did not include an emergency caused by fire. New amendments do provide for such service.

Therefore, the fire departments, which are establishing mutual aid for their respective districts, can now make use of this means of communication.

If no War Emergency Radio Service is now established in a district the local fire department communications engineer can advise applicants on the possibility of utilizing this service.

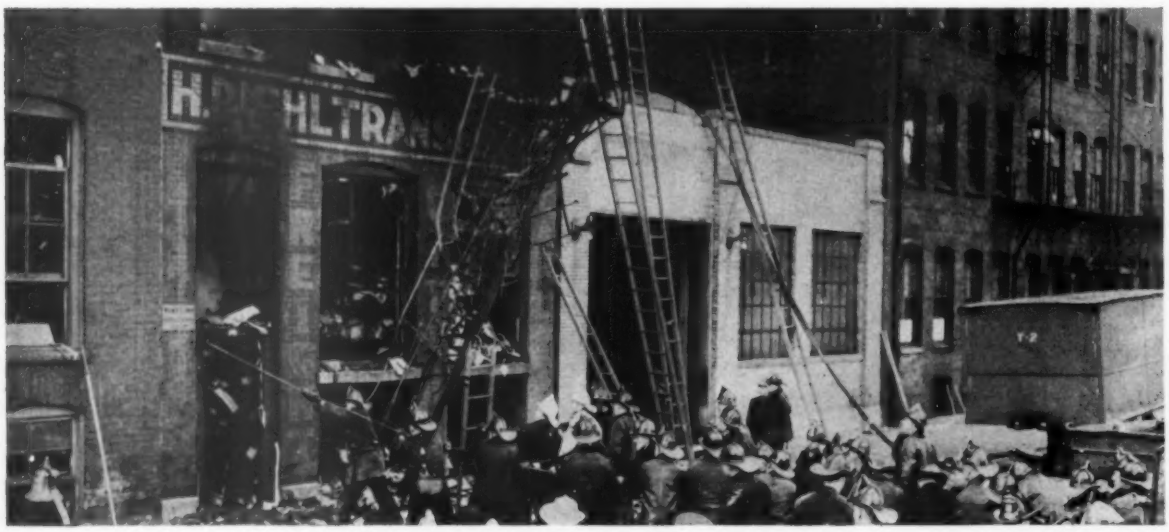
Fire Damages Dow Magnesium Plant

Fire that flared out of control in cell block No. 43 of the Dow Magnesium Corporation's plant in Marysville, Mich., on July 13 caused damage estimated at $500,000.

Spread of the flames to other blocks in the plant was averted, as Block 43 is at the extreme edge and the wind was away from other parts of the factory.

The roof of the 40 by 400-foot block collapsed a short time after flames shot up from a magnesium pot that boiled over, pouring molten metal on the roof. Silver bus bars used in the production process were twisted.

One volunteer fireman suffered leg injuries in a fall while fighting the flames. Fire companies from Marysville and Port Huron helped the company's fire department fight the blaze for three hours.



Chicago Daily News Photo

Firemen Removing Heavy Wreckage in Effort to Clear Entrance to Building

Underwriters' Laboratories' Main Testing Station and Head Office at 207 E. Ohio Street, Chicago, Ill., the Best Example of Fire Resistive Construction in the United States.

Some Wartime Activities of the Underwriters' Laboratories

By ALVAH SMALL*

THE use of science and engineering to safeguard lives and property has been Underwriters' Laboratories' forte for nearly 50 years. The goals sought after have been the reduction of losses from fires, accidents, crime, and related dangers.

Today, as in World War I, the Laboratories' fund of information, and its technical services, built up through testing and research, are daily being tapped by many branches of the Government, armed forces, industry, and others, in order to speed the war effort with safety.

The ways in which the Laboratories' services are being used during this war are many and varied. Some examples may be given.

Probably one of the most important and far-reaching activities has to do with substitutes for critical materials.

When WPB limitation orders or other Government directives drastically reduce or completely cut off the amounts of copper, rubber, zinc, cadmium (to name only a few) which can be used in certain products, questions arise as to what can be used in place of these scarce materials.

Obviously, fire doors, extinguishers, fire hose, alarm systems, lighting fixtures, electric switches, roofing, and thousands of other products must be made in spite of shortages of certain materials. And they must be made so that they will perform safely and thus not disrupt war production through failure.

Under these circumstances, and in order to maintain as high a factor of safety as possible, Underwriters' Laboratories has issued Emergency Specifications covering many products. These Specifications will be in effect only for the period of the war emergency; afterwards, the regular peace-time UL Standards will apply.

Alvah Small

Before setting Emergency Standards for such products as fire hose, when the amount of crude rubber for hose linings was cut more than 50 per cent by WPB, extensive test work was performed. As a result, Specifications were developed which, when met, provide a safe, reliable, and satisfactory product; and a method of checking so as to maintain this Standard through inspection at the factory.

Similarly, when brass was restricted for fire hose couplings, it became necessary to work out a new design and new Specifications employing less-critical materials. Plastics were considered; tests were made; and a final design was eventually settled upon. This consists of malleable iron tail-pieces and a low-content brass swivel ring—the ferrous parts suitably protected against corrosion.

Several thousand tons of brass have already been saved by this change; and the performance of the new couplings—from the Fire Department viewpoint—is satisfactory.

In connection with the acceptance of substitutes, the point to be borne in mind is: now, more than ever before, it is necessary to uphold safety, for these products, which find their way into factories, warehouses, munitions plants, barracks, and transport facilities, are an integral part of the planned production, training, housing, and transportation necessary for Victory. Fires or explosions caused by their failure, injury to personnel, definitely benefit the Axis.

Another wartime activity of Underwriters' Laboratories is the testing and inspection at factories of large quantities of various kinds of materials purchased by the different branches of the Government under Federal Specifications. This work is carried on readily by the Laboratories' staff of trained inspectors in offices located near centers of production in some 200 cities.

For instance, Underwriters' Laboratories' field inspectors are testing at the factories about 1,500,000 ft. of fire hose per month ordered by the U. S. Army and the Office of Civilian Defense to Emergency Federal Specifications. The Office of Civilian Defense has on order

*President, Underwriters' Laboratories, Chicago, Ill. Excerpts from a recent address by Mr. Small.

Elongation, Twist and Warp Tests Given to "Victory" Hose Under the Supervision of Hydraulic Engineer R. W. Hendricks and a Helper.

Tests of Foam, Foam-Fog, Fog Nozzles Applied from Fixed Piping Systems or by Hand Are Made Outdoors.

some 10,800,000 ft. of 1½-in. and 2½-in. single-jacketed fire hose. As of November 1, 1942, 3,000,000 ft. of this hose had been tested by Laboratories' field engineers. The remainder will be tested as produced.

Still another way in which Underwriters' Laboratories is contributing to the war effort is through the uses made of its engineering services and special-investigation facilities. Investigations have been conducted for the Army, Navy, Treasury Department, War Production Board, and the Manufacturers supplying these and other Government branches

Typical investigations conducted by the laboratories, are as follows:

Fire and explosion hazards of Butadiene and Styrene used in the manufacture of Buna rubber.

Effectiveness of methods and products for preventing the shattering of glass by explosions under air-raid conditions.

Investigation of fire-retardant qualities of marine type bulkhead.

Examination and approval of plans for signaling systems for Army hospitals.

Investigation of the effectiveness of electrically conductive flooring, conductive floor finishes, and conductive shoes for use in arsenals and munitions plants where accumulations of static electricity are a hazard.

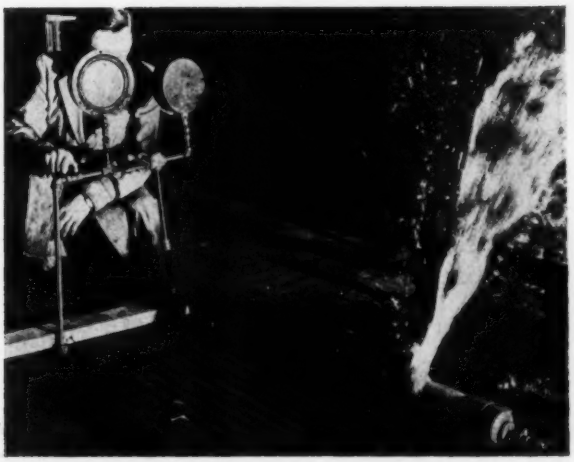
Temperature tests of dust-tight lighting fixtures and tests of other hazardous locations electrical products.

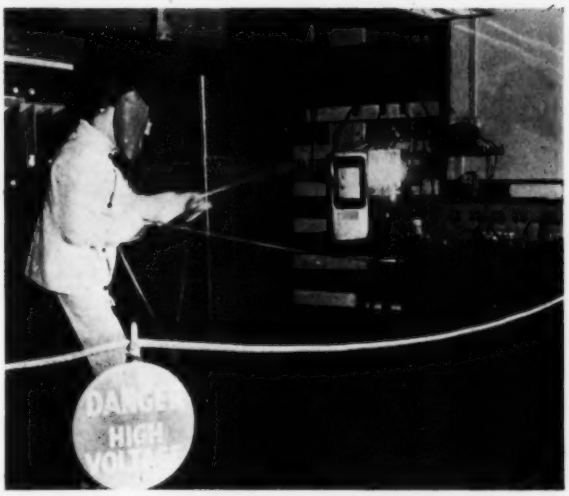
Determination of flammability of camouflage materials for gun emplacements, and for other protective concealments.

Investigation of the fire-retardant value of flameproofed wood for use in ships, barracks, and elsewhere.

Pair of Fire Doors Being Rolled from Large Panel Furnace After Completion of Fire Exposure Test. Doors Will Now Undergo Hose Stream Test

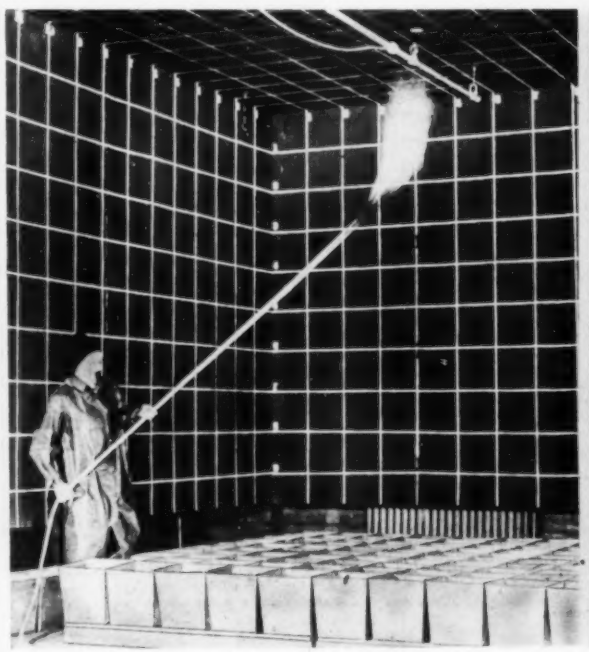
Metal Frame, Wired-Glass Fire Window Under Test at Underwriters' Laboratories in One of the Largest Building Materials Testing Furnaces in the Country.

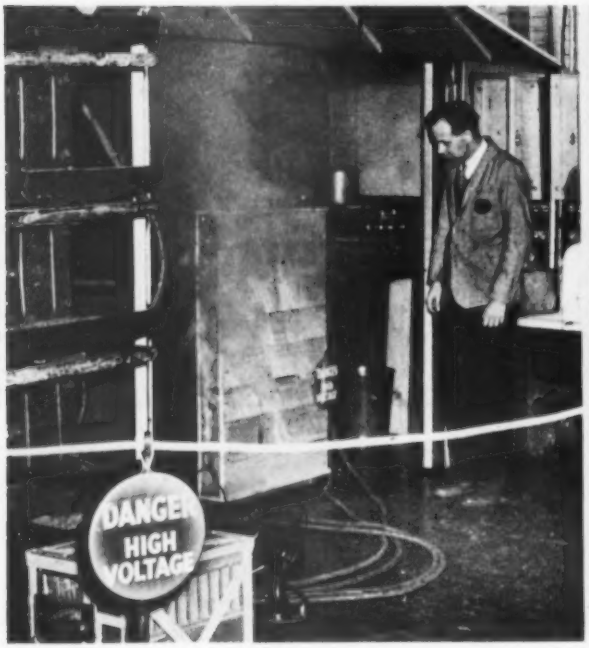




Some Tests Conducted at the Laboratories

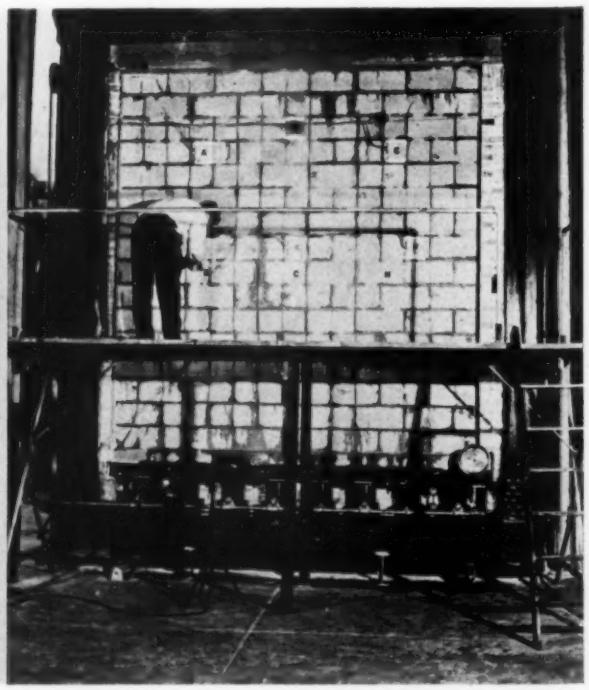
Top Left: Glass block walls are fire tested in large gas fired furnaces to determine how well they will stand up against fire and hose streams, what protection they will provide in time of fire and how much heat passes through them. Top Right: Burst test on section of 2½-inch "Victory" fire hose. Sample in this size is required to stand 600 pounds per square inch. Sample pictured burst at 875 pounds. Center Right: Testing apparatus for heavy duty switches. In the test the switch is given 6,000 operations. Because the failure of a switch carrying hundreds of amperes at a voltage as much as 600 volts sometimes results in sparks and arcing, with consequent melting of copper and other metal with sufficient violence as to be explosive in character, the engineer operating the switch is protected with asbestos suit, gloves and helmet. Bottom Left: One of the many tests made on automatic sprinklers. Bottom Right: Materials for extinguishing magnesium fire are tested under conditions simulating production.





Testing Fire-Resistive Materials

Left: Wall filling thermal insulation is tested to make sure that it cannot propagate flame. Electrical wires running through the partition are made to overheat and are to see if this source of fire will cause the insulation to ignite and spread the fire to combustible materials of which the partition is constructed. Right: "Fire-Spread" test of fire-resistive roofing. The eighteen-foot long section of roofing, covered with the shingles to be tested, has been constructed of wood like the roof of a dwelling. This section or "deck" is inclined in front of a wind tunnel which blows a twelve-mile-an-hour wind. In the mouth of the tunnel is a four-foot wide gas burner. The flame from this is blown on to the roof shingles.



Typical Tests Conducted at Laboratories

Left: Examining the under side of the ceiling-floor construction after the four-hour fire and hose stream test. Engineers O'Brien and Steiner calculate the areas from which the plaster separated from the plaster base. Right: Concrete block walls are fire tested in the large panel furnace at Underwriters' Laboratories.

Tests for tanks for hazardous liquids for use by the Army and by war plants.

Tests of oil-burning furnaces and boilers for war housing projects, and field inspection of the installation of oil-burning stoves in Army barracks.

The story of the development of the 4-gal. OCD fire extinguisher will exemplify the kind of work involved in many of these investigations.

The Office of Civilian Defense anticipated the need for a large number of fire extinguishers to be used by OCD civilian volunteers. The use of brass and copper for extnguishers has been limited to certain types, and then only when produced for specified Government departments. This meant that extinguishers for OCD would have to be made of something other than brass or copper.

To design a rugged fire extinguisher which would serve well even when used by unskilled workers under all sorts of conditions, and which could be produced economically in large numbers without using critical materials urgently needed for offensive war production, was no small task.

Non-Strategic Materials Used

By collaborating on this problem with Army engineers, OCD officials, War Production Board, Underwriters' Laboratories' engineers, and fire extinguisher manufacturers have developed a new type of fire-fighting device which meets all the requirements. The extinguisher decided upon, and now in production, uses water—the best all-round and most plentiful fire extinguishing medium. The device consists of an iron tank which is galvanized to prevent it from rusting. The tank holds 4 gal. of water. In the tank is installed a hand pump to which is connected a 10-ft. length of hose with a nozzle on the end equipped with a deflector for a solid stream or a spray.

The essential difference between the new OCD type of water extinguisher and the type which has been used by fire departments for many years is that the former is made almost entirely of non-strategic materials.

Another war effort activity of the Laboratories has had to do with the protection of shell-loading and munitions plants from lightning.

Laboratories' specialists assisted in the drawing of Federal Specifications covering this subject. Contracts awarded for the "rodding" of these immense plants usually calls for inspection and test of the installations by Underwriters' Laboratories' engineers. Frequent inspections have been made at many plants throughout the country.

One of the newest and, one might say, extra-curricular wartime activities of Underwriters' Laboratories has been the conduct of courses in fire protection, plant protection, sabotage prevention, and related subjects.

Military classes have been sent to the Laboratories' main testing station in Chicago for actual demonstrations and discussions of these subjects. Laboratories' engineers have also presented formal courses of lectures at the schools where these men are being trained.

These are some of the outstanding wartime activities of Underwriters' Laboratories. In other ways, also, which cannot yet be discussed, the Laboratories is working for Victory.

LARGE OAKLAND DEFENSE PLANT WRECKED BY SUSPICIOUS FIRE

Firemen Report Unidentified Man Fled from Plant Upon Their Arrival

By Bob Greenock

RAGING over an area the size of two city blocks, creating such heat that it destroyed automobiles parked in the street and set roofs blocks away ablaze in a shower of sparks, fire on May 28 threatened to invade the Moore Drydock Company plant in Oakland after destroying a $200,000 war plant, gutting two other buildings and damaging other nearby property.

The six-alarm blaze started at 5:38 a.m. and the FBI began an investigation after firemen said they had seen a suspicious man running from the plant of the Lannom Brothers Manufacturing Company, a lumber millwork plant at Fifth and Magnolia Streets, as they arrived.

The large planing mill was operating on Government contracts. One of the old established East Bay manufacturing companies, the plant had been devoted entirely to defense and war work since 1935 when it began furnishing millwork for Pacific naval air stations. Its millwork was used in the construction of Midway, Wake, Guam, Pearl Harbor and other bases.

Smoke and flames were billowing high into the air when firemen arrived. Assistant Fire Chief Manning Basch immediately ordered a sixth alarm and eleven engines, five hose, four truck and one chemical company responded, augmented by a detail from the Coast Guard Fire Battalion.

The flames leaped to the upper floor of the Grandma Bakery on Adeline between Third and Fourth Streets, gutted the upper floor and doing damage estimated at $50,000. Then the fire communicated to the Western Paper Box Company, where damage was estimated at $35,000.

Thousands of feet of vitally needed lumber in the planing mill was tinder for the flames that attracted thousands of persons to the scene.

The flaming lumber created an inferno that melted a series of three-story corrugated iron buildings in the yard like so much lead. So intense was the heat that utility poles across the street, a distance of ninety feet, were ignited and insulation was burned off wire a block away. Residents of a few small frame houses in the district moved their household goods to the curb and prepared to evacuate. Every house within a two-block radius of the fire was damaged to some degree.

Fireman Lloyd Boardman, 24, suffered a leg fracture and internal injuries when he fell through the roof of a house set afire by sparks at Seventh and Union Streets. In helping the injured man from the building, Policeman Ray Pierce lost his footing in the debris on a staircase and suffered a knee injury. Both men were taken to the hospital.

Firemen in other East Bay cities and in San Francisco stood by, ready to aid the Oakland firemen and Coast Guardsmen in the event the high wind fanned the flames nearer the Moore Drydock plant. Once, as the flames approached dangerously near the administration building of the shipyard, the wind suddenly shifted to aid the firemen.

In the initial spread of the flames 400 feet of hose was destroyed and several pieces of apparatus blistered.

Six-Alarm Fire in Oakland War Plant

Practical Training for Auxiliary Firemen

By FRED SHEPPERD
Editor, FIRE ENGINEERING

IN this installment of the series of articles on "Practical Training for Auxiliary Firemen" are discussed fire department ladders.

Q. What are the two principal uses of ladders at fires?

A. Saving of life and facilitating fire fighting operations.

Q. What are the types of ladders commonly found in American fire departments?

A. The following types of ladders are commonly used:

1. Solid side or beam ladders (single). These ladders are also known as straight wall ladders.
2. Solid side or beam ladders (extension).
3. Trussed ladders, single.
4. Trussed ladders, extension.
5. Roof, or hook, ladders.
6. Pompier, or scaling, ladders.
7. Aerial ladders.
8. Junior aerial ladders.
9. Collapsible ladders.

Q. Of what materials are ladders usually constructed?

A. Beams of wooden ladders are usually made of Douglas fir (also known as Douglas pine and Washington fir).

The rungs are made either of white ash or hickory.

In recent years aluminum ladders have been built in increasing numbers.

The aerial ladders may be either of Douglas fir, steel or aluminum.

Q. What are the principal features of construction of solid side or beam ladders?

A. The solid side or beam ladder is usually the easiest to build, and probably the most used of all types of ladders. This ladder consists of two beams with the rungs set in holes bored in the beams. It is heavier per unit of length than the trussed ladder and has neither the rigidity nor strength that the trussed ladder possesses.

Solid Side Ladder. Rungs Are Set in Solid Beams

Trussed Ladder. In This Particular Design, Both Beams Are of Same Size. Rungs Are Set in Spacer Blocks Inserted Between the Two Members of Each Beam.

Q. In what sizes are solid side ladders commonly built?

These ladders are built in many sizes, ranging in the majority of cases, in the following lengths: 12, 14, 16, 18, 20, 24, 25, 28, 30, 32, 33 and 35 feet in length. Sodil ride ladders are rarely built in length greater than 35 feet.

Some of these ladders are built with spurs on both ends while others have spurs on the butt end only. The function of the spur is to protect the end of the ladder and at the same time make possible a more secure footing for the ladder when in use.

Q. How far apart are the rungs usually spaced?

A. Solid side ladders usually have approximately one rung per foot, and by checking up on the number of rungs, the length of the ladder is readily determined. For instance, a 35-foot ladder will usually have thirty-five rungs.

Q. For what are the shorter solid side or beam ladders used?

A. The use of the shorter ladders, 12, 14 and 16 feet, is largely in connection with getting to the roofs of sheds, into the windows of second floors, and similar operations. The 16-foot ladder is commonly employed for reaching the first fire escape landing.

Practically all of the single ladders are also employed for work on roofs of buildings in reaching windows of adjoining buildings.

Q. How does the solid side extension ladder differ from the solid side single ladder?

A. The solid side extension ladder is a ladder made up of two sections which are interlocked by guides, so that one ladder may slide over the other to produce a ladder greater in length than either of the sections. When lowered, the over-all length of an extension ladder is materially less than the reach of the ladder so that it requires less length in the piece of apparatus that carries it.

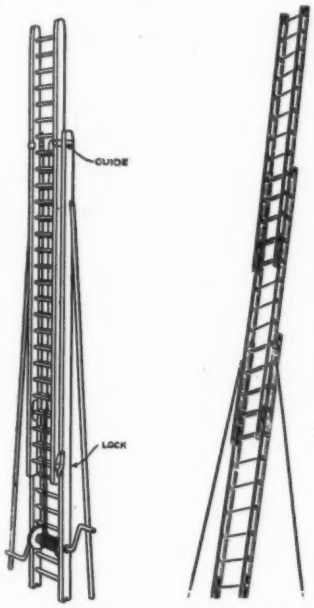
Longer extension ladders are usually provided with halyards (ropes) used for hoisting the fly, or upper section, while shorter extensions do not usually have halyards.

Q. What are trussed ladders?

A. Trussed ladders are ladders having two longitudinal beams, each consisting of two separate members held together by spacer blocks at given intervals, thus resembling the conventional type of truss construction both in appearance and in action. Trussed beam ladders again are of two general types. One type has both beam members of equal size, with spacer blocks at intervals equivalent to the rung spacings; rungs are inserted in the rung blocks, or spacers. The second type has one of the beam members of greater cross-section than the other, both members being held together by spacers at intervals greater

Showing Versatility of Extension Ladders in Reaching Different Heights. Ladder at Right Has Diagonal Cross Braces. Note Tormentor (Ladder Pole) in Lower Right Hand Corner of Picture.

than the rung spacing; rungs are inserted in the larger beam member, known as the main or rung beam, in this case. The other beam member is known as the truss beam. In longer ladders of this type diagonal cross braces are sometimes introduced at intervals between the two beam members to give additional rigidity.



Left: Solid Side Extension Ladder, with Drum and Cranks for Extending. Right: Three-Section Trussed Extension Ladder. Both of These Ladders Are Equipped with Tormentors, or Ladder Poles.

Q. Are trussed ladders made both single and extension?

A. Yes.

Q. Are the trussed extension ladders always of two sections?

A. No. They may be of either two or three sections, although the latter are not as numerous as the former.

Q. What is a roof, or hook ladder?

The roof ladder is a ladder similar to the straight wall ladder, but provided in shorter lengths and lighter construction. Specially assigned hooks provided at the tip end of the ladder permit engaging the ladder over ridge poles or up sloping roofs, thus allowing ladder to be used for work on roofs. Hooks may also be engaged over window sills, copings, etc., and permit use of ladders for climbing over series of off-sets and setbacks. Hooks may be so arranged as to swing or fold in and out of the way when not in use, or may be permanently fixed in open position. Roof ladders may be found in several different lengths, although the more commonly employed are 12, 14, 16 and 20 feet long. This ladder also provides a substitute for the fire escape drop ladder reaching from the fire escape to the ground, from the fire escape to the roof, or any of the ladders on fire escapes which are missing from one landing to another.

Roof Ladder (or Hook Ladder). Hooks Fold In Between Beams When Not In Use.

Q. What is a pompier, or scaling, ladder?

A. A pompier, or scaling, ladder is a light ladder consisting of a single wooden spar reinforced with metal strip (or metal cable) running the entire length of the spar. The spar is usually made of hickory and the rungs either of hickory or of ash. The hook on the scaling ladder is made of iron, and is of sufficient width to span any sill over which it might be used.

The 12-foot pompier ladder has a 24 or 26-inch hook; the 14-foot ladder, 26 to 30-inch hook; 16-foot ladder, 30 to 36-inch hook; 18-foot ladder, 36 to 40-inch hook. The length of the hook is measured from the inner edge of spar out to the point of the hook.

The hook is provided with teeth, from the goose-neck out to the bend, which gives greater security to the ladder when it is hooked over a sill.

The rungs of the scaling ladder are usually in the neighborhood of 14 inches in length, and are placed on their edge through mortises in the ladder spar. The hook is in the neighborhood of 2½ inches high and ½ inch thick, and is riveted to the ladder, with two close fitting collars driven down on the top of the ladder. To these collars are welded two metal straps, one coming down 8 inches on the outside of the ladder and the other on the inside of the entire length of ladder.

Q. For what is the scaling ladder commonly used?

A. The scaling ladder is commonly employed for reaching points higher than the normal reach of other ladders. It is also used for mounting obstructions in an emergency, such as high walls, etc.

Left: Pompier, or Scaling, Ladder. Right: Folding, or Collapsible, Ladder. To the Left the Ladder Is Shown Folded and, to the Right, Opened, Ready for Use.

When used for reaching points above the reach of other ladders, the scaling ladder is carried up the other ladder to its top and then hooked on some support above. It is also occasionally employed for opening wire glass windows. In this operation the scaling ladder is hoisted to the floor below the floor which is to be ventilated, and the ladder worked up hand over hand until the hook is opposite the point in the window which is to be opened. The hook is driven through the window and the ladder thereupon pulled downward, ripping out the wire glass and providing the necessary ventilation.

Q. What is an aerial ladder?

A. An aerial ladder is a long extension ladder permanently mounted on a ladder truck. It may be raised, extended and rotated by hand or by power, and may be built of wood, aluminum or steel.

Q. What is a junior aerial ladder?

A. A junior aerial ladder is an extension ladder permanently mounted to a ladder truck, but of shorter length than the standard aerial ladder. Junior aerial ladders may run around 65 feet in length while the ordinary aerial ladders run from 75 feet on up to 125 feet.

Q. What is a folding (collapsible) ladder?

A. A folding ladder is a short ladder which can be folded up so that the two beams are in contact with each other. This is usually accomplished by having the rungs hinged or pivoted in the beam. When the ladder is opened, it is locked in this position. When it is desired to collapse or fold the ladder, the catch is released and one beam pushed parallel to the other, bringing the beams and the rungs into a compact pole.

Q. For what are collapsible ladders used?

A. They are used for gaining access to attics through trap doors located in closets, and for similar work where space is limited. In other words, they are effective for use in very close quarters where an ordinary ladder would be difficult or impossible to manipulate.

Q. What is a bed ladder?

A. A bed ladder is the lowest section of an extension ladder?

Q. What is a fly ladder (or fly)?

A. A fly ladder is the upper section of an extension ladder.

Q. What is the butt of a ladder?

A. The butt of a ladder is the bottom or ground end of the ladder.

Q. What is the top (or tip) of the ladder?

A. As the name suggests it is the top of the ladder.

Q. What is the beam of the ladder?

A. The principal structural member of a ladder in which the rungs are inserted. In the case of trussed ladders, "beam" usually refers to the larger of the two members making up one side of the ladder, and in this case again, either the rungs are set into the beam or they are set in blocks attached to the beam. Usually the beam side is up, with the trussed side down, when ladders are in position for climbing. This does not hold, however, in the case of certain trussed ladders which are built so that either side may be used for climbing. Usually in this latter case, the two longitudinal members of the beam, that is, the beam and the truss, are of equal or nearly equal thickness. Other manufacturers design ladders for the trussed side to be climbed, as is indicated by the fact that the bolts project from the beam side and are countersunk on the trussed side. However, the majority of trussed ladders are placed with the truss towards the building.

Q. What are the poles (tormentors) of an extension ladder?

A. The tormentors or poles on an extension ladder are poles attached to the upper end of the bed ladder, used to raise, guide and steady the long ladder.

Some tormentors are permanently attached to the bed ladders while others are detachable.

Q. What are ladder spurs?

A. They are metal devices at the butts of ladders and poles to give a secure footing.

Q. What is a halyard?

A. A rope used for hoisting the fly ladder of an extension ladder.

Q. What is a ladder lock (pawl)?

A. A device which locks the fly ladder in place after hoisting the same.

Left: Ladder Lock, or Pawl. This Device Enables Fly Ladder To Be Extended to Any Desired Point, and To Be Locked Thereat.

Below: Showing Spurs on Beam Ends of Ladder. Spurs Protect Beam Ends and Provide Secure Footing.

Q. What are ladder stops?

A. Wooden members, four in number, which stop the fly ladder from being extended out of the bed ladder.

Q. What are ladder guides?

A. Light wooden members on the inner side of truss blocks and on the beams between rungs which guide the fly ladder being hoisted. In metal ladders, these guides are, of course, of metal.

Q. What are ladder tie rods?

A. Metal rods which hold the entire ladder assembly together.

Q. How is the distance which the base of the ladder be placed from a building determined?

A. The distance the base of a trussed ladder should be placed away from a building is found by the formula: 1/5 L + 2, where "L" is the length of the ladder in feet. For instance, if a 35-foot ladder were being placed against the building, and the ladder is of the trussed type, the distance the base should be placed away from the building would be one-fifth of 35, or 7 + 2, giving 9 feet.

In the case of plain beam ladders (solid beam), the distance the base should be placed away from the building to give a maximum strength is found by dividing the length of the ladder by 8. For instance, if a 35-foot solid side ladder were employed, the base should be placed at ⅛ of 35, or approximately 4½ feet away from the building. This rule, however, results in placing the ladder in position too nearly approaching the vertical, and makes climbing difficult. For that reason the trussed ladder rule for placing is commonly followed in extending the plain beam ladder.

Q. How is the distance the base of an extension ladder should be placed away from a building, when the ladder is in position, determined?

A. On extension ladders, the distance the base should be placed away from a building is found by taking 1/5 the length of the ladder. In the case of a 40-foot extension ladder, for example, the base should be placed 1/5 of 40, or 8 feet away from the building.

Q. What is the rule for the number of men that should be allowed at one time on a ladder?

A. Usually only one man is permitted on a 10, 12 or 16-foot ladder at a time; on 18, 20, 25 and 30-foot ladders, two men are permitted; on ladders over 30 feet in length, three men are permitted; on roof ladders on pitched roofs, three men. Some departments permit four men on 45 and 50-foot ground extension ladders and five men on 55 and 65-foot ground extension ladders.

Q. How much do the various sized ladders commonly weigh?

A. Solid side ladders may weigh from 4 to 6 pounds per foot. As an example, a 35-foot ladder, of common design, weighs around 4.4 pounds per foot.

The weight of the various sizes of trussed ladders are given in the following table. It should be remembered that these weights are for one particular make of ladder and do not apply to all makes, although the difference in weights of different makes of ladders is not great.

Trussed Ladder Being Used to Make a Rescue. Here Both Truss and Main Beams Are of Same Size.

Ground Extension Ladders with Halyards

	Weight in Pounds
55-foot ladder	290
45-foot ladder	250
35-foot ladder	175
25-foot ladder	85

Ground Extension Ladders without Halyards

18-foot ladder	55
12-foot ladder	45

Roof Ladders with Adjustable Hooks

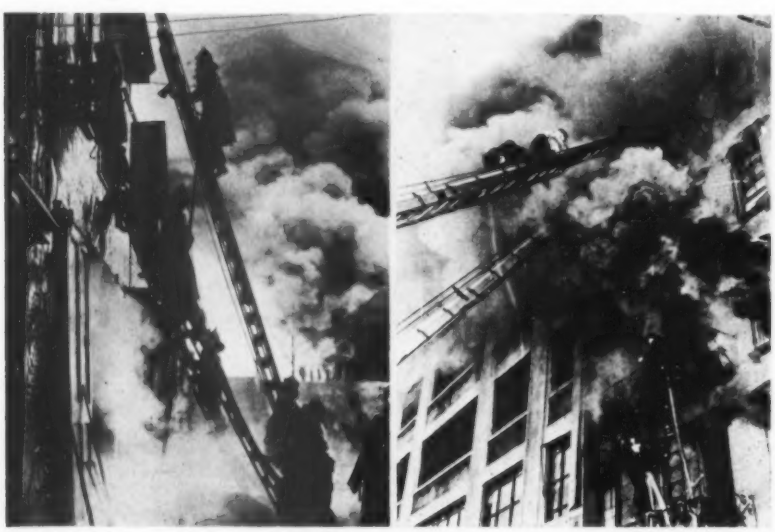
18-foot ladder	50
12-foot ladder	40

Pompier Ladders

14-foot pompier ladder with bronze safety cables	24

Q. Why are ladders commonly varnished rather than painted?

A. Ladders are varnished so that any imperfections in the wood may show through the varnish and be detected. If paint were used, any defects in the wood of the ladder would be concealed and would not be found by inspection, no matter how careful. Thus varnishing of ladders is a safety measure, as well as measure to protect the ladder against weather and moisture.



Operation of Ladders

Left: Extension and single trussed ladders in service at fire. Note size of truss beam on extension ladder at right. Right: Aerial ladders enable firemen to reach higher floors. Both of these ladders are of wood with steel truss rods. All metal aerial ladders are replacing many wooden ladders.

California State Firemen to Meet

Sacramento will be the Convention City when the California State Firemen's Association meets on September 21-24.

Chief Terence Mulligan and George Polkinghorne of the Sacramento Fire Department are co-chairmen, and Chief Mulligan will be official host and greeter during the session. The Hotel Senator and the Fire Department Headquarters at the City Hall have been designated as the joint Convention Headquarters.

Single Jacket Fire Hose Proving Unsatisfactory

Bursting of Jackets and Blowing of Couplings Are Common Experiences

OCD and other single jacket fire hose is performing poorly in fire departments which have used it to any extent. Blown couplings and burst jackets have occurred so frequently that the majority of professional fire fighters do not use it for regular fire-fighting operations.

This experience was not unexpected. Some fire departments anticipated trouble, particularly where single jacket industrial plant fire hose had been used on occasions in the past and had ruptured.

The new OCD single jacket hose, and single jacket hose made available to municipal fire departments by the WPB, are inferior in construction to single jacket fire hose formerly purchased by industrial plants, and poorer performance may be expected.

The lowered quality of rubber lining, and use of malleable iron couplings and steel expansion rings all contribute to its weakness.

Where hose has failed, the principal causes of bursting apparently have been kinking of the hose and chafing. Pressures of less than 100 pounds per square inch have ruptured some hose. Even chafing caused by dragging hose over concrete or other pavements has resulted in some burst sections.

It is likely that the lack of experience with the new malleable iron couplings and steel expansion rings has been responsible for some of the blown couplings, but it will be difficult to prevent all trouble from these. The tendency of malleable iron to rust, and the consequent destructive effect of the rust on cotton jackets will be difficult or impossible to prevent. Failure of the hose in the neighborhood of couplings in the future is something which must be anticipated.

Improper operation of shut-off nozzles may have been responsible for some bursting of single jacket hose, although most Fire Chiefs have continually warned their men against rapid closing of these nozzles when lines were under pressure.

Excessive elongation of hose when subjected to pressure, reported by a number of fire departments, is an indication of weakness in the single jacket hose.

For regular fire service every length of hose must be dependable, for a ruptured section may mean the putting out of service of many lengths in a long line until the burst length has been replaced. What may happen at a spreading fire during this period of inactivity of a line is a matter of conjecture. But the experienced Fire Chief is not going to permit such an accident to happen if it can be prevented. That is why such a large percentage of those reporting state they are not going to use the OCD or WPB single jacket hose for regular fire fighting operations.

The following comments from a representative group of Fire Chiefs located throughout the country give an accurate picture of the status of single jacket fire hose in the professional fire service..

Long Beach, Cal.
A. C. DuRee, Chief

The only experience this department has had is with 9,600 feet of 2½-inch single jacket OCD hose.

Fifteen sections were picked at random and tested to 300 pounds when the hose first arrived; every coupling "sweat," and due to the type of expansion ring used they could not be tightened.

We have had no occasion to use the hose on a fire, and we pray God we never have to.

If the single jacket hose available to municipal departments is comparable to OCD hose, then I would say it is unsatisfactory.

Oakland, Cal.
W. G. Lutkey, Chief

We have found that single jacket hose has a tendency to rupture under normal pressures, such as from 120 to 150 pounds pressure. In some cases it has also ruptured at hydrant pressure of approximately 70 pounds.

It has been observed that as soon as the outer jacket is subjected to any degree of wear the hose is weakened to such an extent that the hose ruptures. This apparently indicates that the single jacket does not offer sufficient protection to the inner lining so that sufficient service may be obtained from this hose.

This hose has been used in drills, over a period of six months. During this time there have been 400 feet of 2½-inch hose, and one 10-foot length of 4-inch hard suction hose which has ruptured.

It has been also noted that a good proportion of the hose which is still in service, becomes misshapen and bulges when laid out and subjected to pressure.

Denver, Colo.
John F. Healy, Chief

The Denver Defense Council has received some 29,000 feet of single jacket hose, which at present is being stored along with trailer pumps in our various fire stations.

We have not attempted to put any of this hose or equipment into service. The couplings on this hose have threads which cannot be used with Denver equipment, except with adapters, and so far priorities have prevented us from obtaining suitable metal for construction of the required adapters.

One or two sections of this hose were given the twist and elongation test in our Repair Shop, the result of which did not impress one of their suitability for regular service usage on department equipment where pressure is needed in hose lines.

Single jacket hose has always been looked upon as being entirely unsatisfactory for Denver Fire Department equipment.

Several hundred feet of this OCD hose has been turned over to one of the local Army Posts, following a request for same made by the Commandant of the Post with the permission of the officials of the local Defense Council.

Savannah, Ga.
Walter S. Blanton, Chief

We have not used single jacket hose in the regular department but our auxiliary department uses it.

We have 6,600 feet of single jacket hose in the auxiliary department and practically all has been used from time to time in drilling.

As the single jacket hose has not been used in the regular department to combat fires, I would not like to pass judgment on its dependability. I prefer double jacket hose in the regular fire department.

Portland, Ore.
Edw. Grenfell, Chief

This sub-standard hose can, by no stretch of the imagination, be considered adequate to fill the need of any municipal fire department. The very nature of its construction precludes that possibility. Double jacket hose constructed along similar lines would also fall far short of filling regular fire department needs.

Upon inspection of 34,000 feet of this hose on its arrival date here, certain

things became apparent, these being that the hose would have to be used as little as possible and that maximum care and protection must be given it.

To date we have had about fifteen lengths burst at pressures less than 150 pounds. The reason that more trouble has not been experienced is that a very small amount of this hose has seen service of any kind, either at fire or drill.

In view of the fact that fire departments of the nation are experiencing a decidedly upward trend in fire losses due to loss of trained personnel, I believe that it is extremely unwise to place an additional burden upon them in the form of sub-standard hose.

I fully realize the need of conserving critical materials at this time. However, it is my opinion that the WPB specifications for fire hose should be stringent enough to guarantee to the fire fighting service hose that could be depended upon. All those familiar with fire fighting fully realize that the best fire fighting organization in the country will fail if forced to work with hose that will burst under normal pressure.

Hartford, Conn.
John C. King, Chief

The only occasion I have had to use single jacket hose is in drilling auxiliary firemen. I can state, however, that I would consider using this hose only in outskirt engine companies.

Akron, Ohio
F. C. Vernotzy, Chief

The Akron Fire Department is now using OCD 2½-inch fire hose for regular service. This hose has been assigned to auxiliary pumping units only. Very few sections of this hose have ruptured under pressure; however, we have had some trouble with the couplings blowing off. Pressure has never exceeded 150 pounds.

We have three engine companies regularly supplied with 2½-inch single jacket fire hose which we purchased recently. While I am of the opinion that this hose is impractical for regular fire department use, we have experienced no serious trouble yet. However, because of the single jacket construction, it does require considerable more care in its use to prevent wear and early failure.

Glendale, Cal.
A. H. Lankford, Chief

We have drilled with single jacket hose and have found it unsatisfactory for drilling purposes as it will not stand the wear. It is, therefore, obvious that it would be unsatisfactory for actual fire fighting operations requiring any reasonable amount of pressure if it will not stand the wear and tear of drilling.

San Diego, Cal.
J. E. Parrish, Chief

We have 27,600 feet of 2½-inch hose and 13,800 feet of 1½-inch single jacket hose. Every length was tested to 300 pounds. Some expansion rings in couplings were loose, but we tightened same so that all lengths stood the required pressure. All of it has been and is being used in drills at various times. Whenever the jacket becomes chafed or kinked a failure in hose occurs. We have had many lengths rupture at pressures up to 200 pounds.

I believe strongly that single jacket hose is unsatisfactory for municipal fire department use. I am not buying any single jacket hose. We repair our condemned double jacket Underwriters' labeled hose and use it in preference to the single jacket as I consider it more reliable. I anticipate serious fire losses in cities using the single jacket EA hose in actual fire fighting, and I hope that WPB will change their attitude and make double jacket hose more readily available.

Saint Paul, Minn.
William J. Sudeith, Chief

During the past few months we have had occasion to use 2½-inch OCD single jacket cotton hose in drill operations conducted at our drill school. Any slight abrasion to the hose jacket will cause same to burst under pressure. We have about six sections of this hose which burst during drill operations. During these drills hose layout ranged from 150 feet to 250 feet. At no time did we use any excessive pressures. As a matter of fact we have had several sections of this hose break under ordinary hydrant pressure of 40 pounds. During these hose layouts at no time did nozzle pressures exceed 40 pounds.

We also had one section of 1½-inch OCD hose break at our Fair Grounds during a demonstration conducted by the Chemical Warfare Service in which only auxiliaries participated. During these demonstrations at no time did nozzle pressures exceed 40 pounds and engine pressure 125 pounds. We used about 650 feet of 1½-inch during these demonstrations. After this hose had been used it was washed and dried in one of our fire station hose towers by regular members. After it had dried, we found an elongation in each section from 12 to 18 inches.

I am of the opinion that this OCD single jacket cotton hose is not serviceable nor satisfactory for municipal fire department use.

For use by auxiliaries it also has its limitations, especially after this hose has been laid out several times over dirt streets or cement pavements as it will be hard to prevent some dragging of hose lines.

Decatur, Ill.
Claude Osborne, Chief

We have used none of this hose yet, but I consider it very poor practice to use single jacket hose.

Topeka, Kan.
William J. Cawker, Chief

We have never used any of this hose and hope we do not have to, as it has never appealed to us as being dependable for fire department use. This city was fortunate in having a large enough supply of hose on hand at the outbreak of the war that we have not, up to this date, had to make any additional purchases. Some of the hose in use by this department is ten to twelve years old, but is of good quality, double jacket hose and we regard it as being more dependable than any hose which has been produced under the specifications of the WPB. We are aware that hose being produced at this time is of an inferior quality, as to rubber content and the construction of the jacket, and for that reason sincerely hope that we will not have to purchase any of it.

Minneapolis, Minn.
Earl Traeger, Chief

We received sufficient 2½-inch and 1½-inch single jacket hose to equip eighty trailer, skid and front mounted pumps. In order that this hose would receive the proper care and maintenance it was allotted to the various companies with orders to put certain amounts on department pumpers to be used in fire fighting.

Under our system of department training, each company is required to report to the training school annually for company inspection (for which the company receives no advance notice) and is required to perform certain evolutions built around hypothetical fires. Therefore, companies began reporting to the school with a certain amount of OCD hose. In an evolution wherein the line is tied in on the fourth floor of the fire escape, charged and then advanced to the fifth floor via stairway, a section burst in the middle and in about the center of the line. This section evidently burst from its own weight. Another section burst at the coupling on the ground in a cellar nozzle evolution.

After these two incidents, all of this hose was removed from the pumpers and its use confined to the training school as we could not take any chances of having troubles in actual fire fighting.

In our fire fighting practices we do not drag any hose. We carry all of it. Our personnel complained that the OCD hose was not satisfactory at the drill school. When bundled up to carry on the shoulder, it slipped and was difficult to handle, so that we have discontinued the use of OCD hose in our department. It is used exclusively for the training of auxiliary firemen.

Our experience indicates to me that this hose will not hold up under fire fighting conditions. It is my opinion that the War Production Board should go back to double jacket hose with a better rubber lining.

Shreveport, La.
S. J. Flores, Chief

We have used OCD hose very little and wouldn't attempt to use it at a real fire, as it wouldn't stand the gaff.

I am trying to get approval now to buy 2,000 feet of hose and I do not want the single jacket hose, as I have blown couplings off three sections already.

Berkeley, Cal.
William Meinheit, Chief

We heartily agree that single jacket hose does not and will not stand up under municipal fire department daily demands. We experimented long before Pearl Harbor on existing limitation orders (to be specific, in 1937) and two years later not a piece of the single jacket merchandise remained in service—a complete loss and waste of taxpayers' money.

OCD hose may stand the momentary 300-pound factory test, but in actual use its serviceability or dependability is an unknown quantity. No hose lead is stronger than its weakest length.

Our experience to date is:

Two lengths of 1½-inch burst through

jacket at 60 pounds pressure while being used in drill.

Five lengths of 2½-inch hose burst through jacket at 80 pounds hydrant pressure while being used in drill.

We have not had any failure due to couplings blowing off.

Some sweating has been experienced in testing and drills, indicating in our opinion, future rupturing.

We definitely feel that single jacket hose is unsatisfactory.

Sioux City, Ia.
Charles B. Kuhl, Chief

We have never used any single jacket hose in this department, and have always purchased the best double jacket hose on the market. I know that single jacket would not stand up in this department as we have from 105 to 114 pounds pressure in our business and industrial districts and this takes a good grade of hose.

Columbus, Ohio
C. W. Ogborn, Chief

Our experience at the present time has been very limited inasmuch as the greater part of our training of auxiliary firemen has been done with our regular fire department hose. However, we have tested all hose received and have experienced no difficulty with couplings or burst sections. We received 6,000 feet of 2½-inch hose which was tested at 200 pounds pressure, and 3,000 feet of 1½-inch hose which was tested at 150 pounds.

However, we have just started drilling with the OCD hose and our drill master has given strict orders not to close nozzles for at the present time we have to use our own nozzles as the Government adapters and nozzles have not yet arrived.

We did experience this difficulty when we were asked to test the hose of the Navy at our Municipal Airport. The pressure on the hose was marked 300 pounds but before that pressure was reached, some of the hose blew off couplings and stretched three or four times the ordinary stretch of good municipal fire hose. However, as stated before, the hose allotted to the City of Columbus has as yet shown no signs of bursting or couplings blowing off, although it has had very little service.

As to the efficiency of this hose for municipal fire department purposes, I positively would not recommend single jacket hose for fire department use. I do not believe it can stand the high pressure required at various times when you have to combat large fires with high pressure streams.

Fresno, Cal.
L. A. Moore, Chief

The single jacket hose has never been used or tested in the City of Fresno. The experience of the Army camps surrounding Fresno has been bad.

Single jacket hose has burst at very low pressure, due to kinks, torn jackets, etc.

Bridgeport, Conn.
Martin J. Hayden, Chief

There is no single jacket hose used in the Bridgeport Fire Department. The only single jacket hose here is in the munition factory fire departments of which there are several. It is also used in drills with two auxiliary companies.

It is my opinion that it will not stand the pressure at a long severe fire.

We have had two suction couplings blow off at 80 pounds pressure at the hydrant.

Kansas City, Mo.
John T. Lynch, Chief

We have no single jacket hose in our department. We do have 40,000 feet of OCD single jacket hose, but have never used any of it except during the high water last month when the airport was in danger. We pumped river water just through the open butt with no pressure. I don't believe the single jacket hose will stand up very long in city fire departments where they use pumpers and shut-off pipes.

Cambridge, Mass.
Herman E. Gutheim, Chief

Last summer at the request of the OCD I tested some of the hose at 200 pounds pressure, attached to a gear pump and a hole was worn through the hose in about fifteen minutes.

At the Army maneuvers on May 23, we were using two lines attached to an OCD pump and two sections burst.

We have never used this hose at a real fire. In our city the hose is given hard usage and it would be a waste of money to purchase single jacket hose as it would not stand up.

Pasadena, Cal.
C. L. Bolz, Chief

We have received 6,000 feet of OCD 2½-inch single jacket hose. Each length was tested to 200 pounds hydrostatic, at which time we lost none. Later we again tested to 200 pounds lengths selected at random, losing none.

The hose has been used only in drills and about 1,400 feet in all. Three lengths ruptured at from 40 to 70 pounds pressure.

We have in addition lost four lengths of OCD suction hose by bursting.

I do not consider it satisfactory for municipal fire department use. We have at times tried out single jacket hose, and find it does not stand up.

Atlanta, Ga.
C. C. Styron, Chief

We do not have any single jacket fire hose in this department.

Every year we have bought a good grade of hose and have tried to keep all of the companies well supplied. Last year the order for hose was canceled since it was not possible to get a good grade. We did not request an appropriation for this year.

Oil Refinery Burns

Following two explosions, flames raged through the Freedom Oil Company's main works at Freedom, Pa. Intense heat of the oil-fed flames drove the firemen back several times, but they succeeded in controlling the blaze after three hours of intensive battling.

I consider that the hose in service is better and will last longer than any single jacket unless it is an emergency.

New Haven, Conn.
Paul P. Heinz, Chief

Our experience with OCD hose to date has been unsatisfactory. Recently, we ordered this hose checked and a 60-pound hydrant pressure was used to pass water through the hose, using an open end nozzle. This resulted in the bursting of one length of 1½-inch and two lengths of 2½-inch hose.

Jackets on some of the hose were loosened in places. This hose has seen little service as it is used only at weekly drills.

We have about 12,000 feet of 2½-inch and 6,000 feet of 1½-inch hose in our OCD service.

I do not believe that single jacket hose is suitable for actual fire fighting operations, particularly where heavy streams may be used.

Flint, Mich.
R. M. Hitchings, Chief

I have not had an occasion to use any single jacket hose on fires but have used some in auxiliary firemen training.

We have used it on hand lines only with a pressure of 80 to 100 pounds. As this does not put much strain on the hose, I have not experienced any trouble with it. However, I consider it unsatisfactory for fire department use.

Des Moines, Ia.
Charles L. Slade, Chief

We have 9,000 feet of 2½-inch and 4,500 feet of 1½-inch OCD single jacket hose, not all in use at the present time however. From the experience we have had on what we have used, I will assure you that we don't want any of it for the fire service. Until our supply falls below just a load, with no reserve, per station, we'll have none of the stuff.

We really haven't used it enough to have much trouble but we have one section that has been chafed for no accountable reason and is leaking. Another section had to have a coupling replaced to prevent blowing off.

It is my opinion that trouble will come with the couplings as some are rusting now and also sticking.

I pity the Chief who is compelled to purchase this type hose as it is surely throwing money away. The outer or scuff jacket cannot be eliminated from fire department hose and put any dependability in it. I trust the WPB will realize this fact and change their procedure.

Louisville, Ky.
Edward A. McHugh, Chief

We have not used this type of hose in our regular fire department, but have made numerous tests of it by the auxiliary fire companies and have had no failures with pressures up to 200 pounds. Our auxiliary firemen have been instructed to use extreme care in handling this hose due to its single jacket construction. If dragged over streets or abrasive ground and the single jacket is damaged, we naturally have no second jacket for a safety margin.

We feel that for actual municipal fire fighting service double jacket fire hose is very necessary.

Cleveland, Ohio
Emmet H. Byrne, Batt. Chief

Fortunately we have not used any of this fire hose under actual fire conditions but have used it for instruction work and drilling of auxiliary firemen and for special demonstration work with them. From our experience we find this single jacket hose unreliable and not practicable for fire conditions where water pressures of more than 100 pounds are required.

At one demonstration personally supervised by me, four sections of hose burst under less than 100 pounds pump pressure. Three of these sections were in a line connected to a foam generator which only necessitates 100 pounds pressure. This pressure was being maintained when the hose burst. The other section burst when connected in a line to a fog nozzle. The pressure at the pump at this time was 110 pounds. At another demonstration using 200 feet of hose attached to a fog nozzle and using 110 pounds pump pressure a section blew out.

We have had ten sections burst so far, none of which was under more than 140 pounds pressure. We have at times operated under slightly higher pressures than this. The break appears to blow a clean hole right through the rubber lining and jacket as though a bullet were shot through it. These blowouts occur at various points in the hose. No couplings have blown off so far.

We are also having some difficulty with the hard suctions. Two of them have blown through so far while connected from hydrant to pump. Hydrant pressure on one occasion was 90 pounds and on the other approximately 45 pounds.

Duluth, Minn.
C. D. Goldsmith, Chief

Our experience with single jacket hose has not been very satisfactory. In fact, in our experience this hose has even burst with hydrant pressure, and we are afraid to use it in regular fire service.

Detroit, Mich.
John A. Keefe, Chief

The single jacket hose thus far received by our department has been used only in evolutions in connection with the training and drilling of auxiliary fire fighters on federally owned equipment. The hose has not been used in Detroit in actual fire fighting operations as the record compiled by the single jacket hose is such that does not warrant a satisfactory performance if used under actual fire fighting conditions.

Difficulty has been encountered in that several hose couplings have been known to pull out as the coupling rings seem to be of an inferior quality. Another disadvantage has been presented by the constant rupturing of the hose, after being used a comparatively short time at hose pressures ranging from 100 to 125 pounds. The use of fog nozzles which require higher pressures would not be advisable if this type hose were used.

The outer jacket is easily damaged by dragging the line across concrete, pavement, etc., and I believe it is an attributing factor in causing the line to burst. The fact that the synthetic rubber inner lining may be of an inferior grade adds to the general poor performance of the single jacket hose.

Approximately forty lengths of this hose have been used extensively in training and eight have proven to be defective, four lengths of which ruptured easily.

It is my opinion that the single jacket hose is not satisfactory for municipal fire department use.

Buffalo, N. Y.
John T. Tubridy, Commissioner

We have found where single jacket hose is used in training of auxiliary firemen that it is unsuitable for rough usage. We only use the hose in drills but we are ready to use it if needed at fires. It is carried on all our auxiliary skid pump units and trailer pumps.

We have found one cracked coupling, but no couplings blew off the hose. We have used about 200 lengths and eight lengths of 2½-inch hose have developed beraks and burst in various places. One length of 1½-inch hose has developed leaks.

I consider this single jacket hose for municipal fire department use very unsatisfactory, and I believe the U. S. Government has wasted time and money on single jacket fire hose.

With the shortage of rubber the only fire hose that would give suitable service to municipal fire departments is the double jacket hose which up until now we have been unable to purchase.

Montgomery, Ala.
R. L. Lampley, Chief

While we do not use single jacket hose in our department proper, we have had quite a bit of experience with this type hose through fighting fire with it in several of our industrial plants.

In one fire we used some of the company's single jacket hose approximately five months old. It was used off a hydrant at a pressure of 110 pounds. One line burst as many as three times. Experienced men were handling this hose. Of course, this line was independent from our regular lines laid by the department (double jacket) and it really didn't make a great deal of difference about it bursting, but the point is that had we been dependent on this single jacket hose, the chances are we would have a total loss.

In my personal opinion, I do not approve of single jacket hose for fire department use as I do not think it is safe to use in department use. I recommend the best grades of fire hose that can be bought.

Cicero, Ill.
George Knol, Chief

While we haven't used any single jacket hose as yet, I have never considered it as sufficient for fire department use.

Sacramento, Cal.
Terence Mulligan, Chief

To date our experience with OCD single jacket hose has been rather limited, but what little use we have given it has not been altogether pleasant.

Two lengths of the 2½-inch hose and one length of intake suction has burst on separate occasions.

In neither instance when the 2½-inch broke has the engine pressure been over 100 pounds with five lengths of the hose being used.

On one occasion we were conducting a drill at our training tower with an OCD rig when a length of 2½-inch hose, 100 feet from the engine, ruptured about ten feet from the butt.

The other incident was at a small fire which could have caused serious complications had we not had our regular department hose on another line. This length of OCD hose was the fifth length from the engine. It also ruptured about ten feet from the butt.

When the suction broke we were pumping at 80 pounds engine pressure.

On all occasions the breaks have occurred when the nozzles have been shut off.

In view of the above circumstances I have instructed my men not to use any of this hose except in dire emergency.

New Orleans, La.
Frank P. Rivard, Act. Chief

Not having any of this hose in service with this department, and due to lack of experience with same, it would be impossible for me to pass judgment as to whether or not this grade of hose would do for fire department service.

It is my opinion, however, that this hose would be unsatisfactory for municipal fire department use.

Medford, Mass.
Thomas A. Qualey, Chief

This department has not used much single jacket hose. The only single jacket hose we have in the department was furnished by OCD and we have used it for training and did use it at one fire without any trouble, no couplings blown off or burst joints. The hose was used under 125 pounds pump pressure.

This department has not purchased any single jacket hose.

I was appointed Chief of this department in 1918 and at that time there were several hundred feet of single jacket hose in service and I retired it all as soon as I could replace it for double jacket, as it was not satisfactory at that time. That was my experience then and I say it would be the same now.

Omaha, Neb.
D. A. O'Connor, Chief

To date we have not used any of the OCD apparatus and hose at actual fires.

The hose was used for pumping operations after the recent flood in this area, but of course it was not subject to any pressure. All of this equipment has been used at our training school and it has been satisfactory.

However, I do not consider single jacket hose satisfactory for municipal fire use. All of our hose is double jacket.

New Bedford, Mass.
Edward F. Dahill, Chief

We have on hand 7,200 feet of 2½-inch and 3,600 feet of 1½-inch single jacket hose and have not had any trouble.

So far, we have used only about 1,000 feet for drill purposes.

Covington, Ky.
F. A. Northcutt, Chief

We have had little or no experience with single jacket hose in recent years. It has proved ineffective in the past and has never been used as standard equipment.

Just recently we received from the OCD hose of this type together with other OCD equipment, but it has been used only for drills. Just what pressure it will stand up under, we have not experimented as yet. Therefore, until further tests have been made with this equipment, I am unable to express an opinion as to its municipal use.

Malden, Mass.
Loran A. Keddie, Act. Chief

We were allotted two OCD skid pumps, four trailer pumps and one front end with 2,800 feet of the OCD single jacket 2½-inch and 1,400 feet of 1½-inch hose, all of which we have had in our possession for months. The necessary fittings and appliances needed to put these pumps into operation we have yet to receive and have been unable to find anyone who could tell us when, where or how we could obtain them.

As the hose needs a special spanner, of which we have none, we have not used any of the OCD hose as yet. Having heard of other departments who have used the hose with poor results I have not been too anxious to put it into service. If and when we get the spanners, we intend to use the hose at dump or fires which, should the hose let go, no extra hazard would be met with.

We have the two skid pumps mounted on chassis and they are in service as we were able, after a great deal of red tape, to have two 4½-inch double female swivel connections made.

I believe that the single jacket hose cannot stand the strain it will be subjected to in many cities throughout the country.

Cincinnati, Ohio
Barney J. Houston, Chief

We have purchased no single jacket hose for regular fire department use, and the only single jacket hose that we have on hand is that which was delivered with the pumps furnished by the federal government for the auxiliary firemen. This has been used in practice work for auxiliary firemen, but we have had no experience of any bursting or couplings being blown off.

Macon, Ga.
J. E. Dellinger, Chief

We have not used any single jacket hose as yet. We have enough double jacket to last this year and perhaps next. The OCD have sent some single jacket here for drills and use by the auxiliary firemen. I don't think much of single jacket hose, although we have not used any.

Springfield, Ill.
T. J. Kelly, Chief

We have never used single jacket hose but consider it unsatisfactory for municipal fire department use.

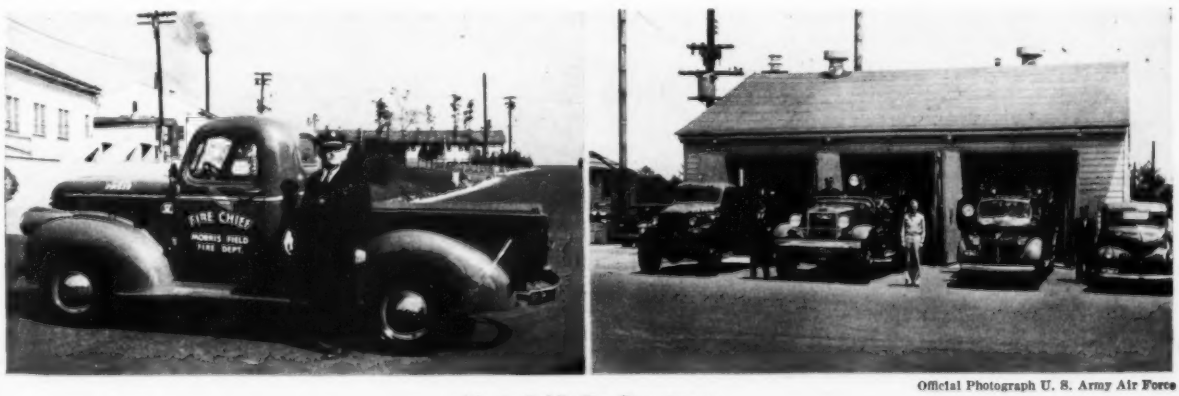
Waterbury, Conn.
Thomas F. Cavanaugh, Chief

We have used 1,200 feet of single jacket hose. It is used for drills alone. A connection on length of suction blew off. We do not feel that is satisfactory.

Grand Rapids, Mich.
Fred P. Higgins, Chief

We have not used any single jacket hose, but feel that it is unsatisfactory for use by municipal fire departments.

Our purchasing agent is trying to purchase double jacket hose for us at this time. I am afraid of OCD couplings and did not purchase any hose from our last budget, but will buy now if good hose is available.



Official Photograph U. S. Army Air Force

Morris Field's Fire Department

Left: Fire Chief W. H. Fuller of the Morris Field, Charlotte, N. C., Fire Department standing beside his truck. Right: Apparatus and men of the Base Fire Department. The Fire Department also has another crash truck which is kept on the flying field, manned with four men.

Sick Leaves and Vacations

How Fire Departments Handle the Problem of Absenteeism

In some fire departments the problem of sick leaves, vacations and other absences constitutes a serious one, particularly in these times of reduced personnel and increased fire hazards.

For example, if sick leaves total five per cent of the total man-hours of the department for the year and vacations amount to five per cent more, the manual strength of the department is reduced a total of ten per cent. Such a reduction would be a serious matter for a great number of fire departments, and particularly those protecting large defense plants and extended residential areas.

To determine the practices of fire departments in handling the matter of sick leaves and other time off, a typical group were asked to submit data covering leaves and vacations during the past twelve months. The tabulation herewith gives the results of the survey in a form that permits ready comparison of practices in different cities throughout the country.

The following information is included in the table: total paid force; total man-hours lost due to sickness; percentage of total man-days; winter leaves compared to summer leaves; whether or not vacancies are filled by substitutes; man-days lost by injuries; man-days lost by vacations; number of men on vacation at one time; number on special leaves at one time; whether or not full salary is continued during leaves; how absences are investigated.

One point of interest brought out by the survey is that fact that in no case is medical service of the department extended to other members of the fireman's family.

As might be expected, there is a wide diversity between the number of sick leaves in summer and winter, with winter usually bringing forth the larger number.

The majority do not fill vacancies due to sick leaves with substitutes.

During periods of absence due to illness or injury, it is common practice to pay full salary, although a few cities allow only half pay for sickness. A time limit is usually set for the period during which pay is granted for sick leaves; in some instances a time limit for pay during absence from injury is also set.

In Fort Wayne, Ind., the legislature at its last session passed a bill allowing the members of the fire department to work for those in the armed forces and draw overtime pay. This gives a full department and holds the jobs open for those who may return from the services. Any man on special leave must have a man working in his place. This man would be from the opposite shift.

In Charleston, W. Va., a regular man works extra time to fill the place of those on sick leave. Thus no time is lost due to sickness.

City	Total Pd. Force	Total Man-Days Lost Due to Sickness	% of Total Man-Days of Force	Winter Leaves Compared to Summer (Man-Hours)	Vacancies Filled by Substitutes	Man-Days Lost by Injuries	Man-Days Lost by Vacations	No. of Men on Vacation	No. on Special Leave	Full Salary Continued During Leave	How Are Absences Investigated?
Alabama											
Birmingham	285	1944	1.8%	W-968 man-days S-946 man-days	No	250	3990	25-35		Sick—60 days Inj.—6 mos.	City Dr. Chief's Office
Tuscaloosa	27	112		W-2/3 S-1/3	Yes	0	285	No more 2 than 2		Vacations—Yes Sick—Full Pay Vacations—Yes Leave of absence No	Chief & Asst. Chief
Arizona											
Phoenix	103	124	.33%	W-1032 S-456	Yes—Off-Shift Men	94	1545	8	2	No	Members of Dept.
Arkansas											
Little Rock	90	385½	1%	W-129 man-days S-256½ man-days	In Emer. by Off-Shift	132	1290	10-15	0	Full Sal.	Asst. Chief
Fort Smith	19	30	1⅛%			60	600	4	0	Full Sal. for inj., sick, vacation	Chief
California											
Burbank	43	110	1%	W-774 S-546	No	1	396	2	1	Vacations—Yes Sick—30 days Special—No	Chief Officers of Dept.
Oakland	404	18276 man-hrs.	9.5%		Army & Navy Leaves Only	15060	6060	30	0	Sick—60 days full, 60 days ½ injury 1 yr. full.	Sp. Inves. Batt. Chief
San Diego	221	1142	1.7%	W-25% More	Yes	380	3534	8	1	Sick—15 days 16 days vacation. Full pay for inj.	F. D. Dr.
Colorado											
Denver	408	1854	1.24%		No	1293	5760	35	3-4	Vacations Only	Police Sur.
Connecticut											
Bridgeport	213				Yes		2982	15	2	No	F. D. Dr.
Bristol	40	110		W-80 man-days S-30 man-days	Yes	70	175	5		Inj.—Full Sick—1 wk.	Chief F. D. Sur.
New Haven	280	705	1%	Equal	No	175	3830	5-35	25	Vacation—Full Inj.—Full	Comp. Ins. Inves.; Batt. Chief
New London	32	76	13⅓%	S-100% more	Yes	153	350	3-4			Fire Chief City Dr.
Stamford	77	771	10%	1st 6 mos. 472 man-days 2nd 6 mos. 302 man-days	No	72	1092	4	0	Full Sal.	Chief
Delaware											
Wilmington	181	1017		W-1450? S-469	No	194	2534	12	1	Yes	F. D. Sur.
District of Columbia											
Washington	940	9882	3.6%	Equal	No		82.4 per mo.		0	Full Sal.	Batt. Chief Co. Officer
Florida											
Orlando	43	84	1.87%	Equal	No	0	508	3	3	Full Sal.	Chief

City	Total Pd. Force	Total Man-Days Lost Due to Sickness	% of Total Man-Days of Force	Winter Leaves Compared to Summer (Man-Hours)	Vacancies Filled by Substitutes	Man-Days Lost by Injuries	Man-Days Lost by Vacations	No. of Men on Vacation	No. on Special Leave	Full Salary Continued During Leave	How Are Absences Investigated?
Illinois											
Elgin	37	144	1%		No	30	525	4		Full Sal.	Dr. after 3rd day
Waukegan	23	146		Equal	No	74	133	2	2	Full Sal.	Dr's notice
											Chief
Indiana											
Michigan City	29	30	0.3%	Equal	No	30	200	2	2	Full Sal.	Sick Comm.
Muncie	61	693	3.1%	W-18,960 incl. S-17,648 vacation	No	4	854	4	0	Sick Leave & Vacation—Full	None
South Bend	135	553½			No	134¾	2125	12	0	Full Sal.	City Dr. Ch. Officer
Terre Haute	116	279	0.55%	W-80% S-20%	Yes	356	1624	10		Full Sal.	City Dr.
Iowa											
Clinton	29	13		W-10 man-days S-3 man-days	No	0	420	2	2	Full Sal. for 2 wks.	Chief Asst. Ch.
Des Moines	202	1254	1.7%		No	40	2505	26		Full Sal.	Dr. Certif.
Dubuque	56	433	1%	W-70% S-30%	No	194	940	4	0	Inj. on Duty Full Off duty ½	Co. Officers.
Mason City	27	251	2%		No	91	375	4 per Mo.	2 a Mo.	Full Sal.	Chief & City Physician
Waterloo	59	109	1%	W-30 S-70	No	18	826	4	0	Full Sal. for Inj. & Vacation	Chief
Kansas											
Kansas City	142	2508	5%	W-13296 S-17664	No	621	1988	16	13	Sick—15 days full pay; ½ pay for remainder. Inj.—full pay	Chief & F. D. Dr.
Wichita	165	542½		Equal	No	530	3630	6		Full Sal.	Dr.
Kentucky											
Lexington	83	778	2.57%		No	161	1245	4-5		Full Sal.	Chief, City Phys. & Comm.
Louisiana											
New Orleans	680	6873	2.69%	W-6120 S-6840	No	620	10200	27	7	No	Ch. Engr., Asst. Engr. & Dept. Dr.
Maine											
Bangor	58	67	0.3%	W-38 man-days S-29 man days	No	121	812	4		Sickness—Full	Chief
Lewiston	50	48	0.4%	W-80% S-20%	No	3	660	4	0	Full Sal.	Chief & Fire Sur.
Massachusetts											
Cambridge	233	485	4%	Approx. Equal	Military Subs. only	177	2800	28 to 30		Full Sal. for sickness or inj.	Off. of Co. Dr. cert.
Chelsea	88	998	3.2%	W-600 man-days S-398 man-days	Yes	600	1848	8	0	Full Sal.	Chief
Chicopee	72	649	3%	W-5520 S-2268	Yes	31	998	6	1	No.	Chief & Dept. Official
Everett	92	115	Less than 1%		No	32	1260	6	0	No.	Asst. Chief
Fitchburg	75	543	1.984%	W-4236 S-2280	No	33	1050	6	0	Sick—½ Inj.—Full	Chief
Michigan											
Battle Creek	73	0		S-60% W-40%	No	52	476	5	0		Chief or Asst. Chief
Bay City	90	909	2½%	W 3/7 S-4/7	No	30	690	3	1	Full Sal.	Chief or Captain
Detroit	1466	8893			No	3358		1-2 per Co.	2-3	Full Sal.	Dist. Chief Dept. Dr.
Minnesota											
Duluth	160	867½	1.8%	W-70% S-30% W leaves ½ higher	No	54	2240	15	25-30	Inj. over 7 days—$20.00 per week	Doctor
Minneapolis	502	3830			Only after Leave with pay expires	1263		29		Inj. or sick. 90 days pay	Asst. Chief
St. Paul	374	2810	2%	W-1708 man-days S-1102 man-days	No	857	6732	30	0	Sick—15 days pay plus accum. leave; Inj.—6 mos. full & 6 mos. ½ pay	Dist Chief
Mississippi											
Jackson	62	0			Off-shift	246	620	5	0	Vacation & sick leave—Full Sal.	F. D. officials
Missouri											
St. Joseph	107	346	Approx. 1%		No	45	1545	6	0	None	Chief
St. Louis	893	6464	1.983%		No	1762	15860	100		No	Batt. Chief
Springfield	65	186½		W-144½ man-days S-42 man-days	Yes	36	650	4	2-4	Full for Vacation & inj.: 30 days for sick leave	Chief or Capt.
Nebraska											
Lincoln	104	833	2¼%	W-6099 S-3897	No	202	1456	8	0	14 days sick leave & vacation	Chief
New Jersey											
East Orange	81	197	3%		No	0	1428	8	8	Full Sal.	F. D. Dr.
Kearny	90	305			No	0	702	5	0	Full Sal.	Dep. Chief
New York											
Binghamton	145	775		W-218 man-days S-164 man-days	Military Yes	86	1015	10	0	Yes	Chief & Dept. Dr.
Buffalo	903				Military Yes		13575	115	0	Full Sal. for sick up to 6 mos.	F. D. Dr.
Elmira	90	547	2%	W-66 2/3% S-33 1/3%	No	126	1085	8	0	Full Sal.	Dep. Chiefs
Jamestown	73	98	0.4%	W-70% S-30%	No	63	955	4	0	Full Sal. for inj.: 14 days for sick	Fire Chief
Niagara Falls	131	1605	3.4%	2940 man hrs. more in Winter	No	608	1764	4-6		Full Sal. vacation: inj. indef.: sick 4 mos.	Asst. Chief if questionable
North Carolina											
Durham	65	165		Approx. same	No	4	798	2-3		Full Sal.	F. D. Officers
Greensboro	71	60			No	8	994	1-3	2	Full Sal.	Chief
Winston-Salem	81	56	0.5%	W-66 2/3% S-33 1/3%	No	100	810	14		Full Sal.	Chief
North Dakota											
Fargo	31	38			No	84	364	2	1		Chief
Ohio											
Akron	191	491			No	151	2604	14	0	Full Sal. for 60 days	F. D. Dr. & Capt.
Columbus	331	143	3.32%	Equal	No	50		12	1		F. D. Dr. & Dist. Chief
Lakewood	66	120	0.5%	W-56 man-days S-64 man-days	No	26	924	4	0	Full Sal.	City Health Comm., Chief Co. officer

Continued on page 464)

NEW AIRFIELD CRASH TRUCK GIVEN SPECTACULAR TRYOUT

Fog and Fog-Foam Make Quick Work of Gasoline Soaked Plane Fires

ON July 12, at LaGuardia Airport, New York, a very spectacular demonstration was given of one of the new Air Corps crash trucks for handling airplane crash fires. This new truck, which is built by the Mack Manufacturing Corporation, was developed under the direction of W. W. Dean of the Fire Prevention Section, Corps of Engineers, and Colonel Kuldell of the Office of the Chief of Engineers.

This unit employs high pressure fog or a combination of fog and foam through two deck turrets (or monitor guns), two hand fog guns, and a hand applicator nozzle. Its normal crew includes two men in asbestos suits for executing rescue operations under protection of the high capacity fog guns, and three or more additional men to operate hand lines.

Tests With Fog-Foam and Fog Alone

Two tests were conducted at this demonstration. The first test consisted of extinguishing fire in a makeshift plane, which consisted of the fuselage of a plane, with strips of corrugated iron as wings. The plane and area around it were drenched with 300 gallons of gasoline. It took but forty-seven seconds to bring the fire under control, and possibly a half minute longer to wipe out small remaining bits of fire within the fuselage and on the ground. In this operation 500 gallons of water were used.

Both deck guns and three lines, one with applicator, were employed. Pump pressure was 600 pounds per square inch.

The first test was conducted from the leeward side of the fire, as indicated in the illustrations herewith.

The second test included the extinguishing of a fire in the same plane, but in this case only fog was employed, at 600 pounds nozzle pressure. Two hundred twenty-five gallons of gasoline were sprayed over the fuselage and on the ground and it required twenty-one seconds to bring the fire under control. In this operation 300 gallons of water were used.

This fire fighting unit is to travel throughout the country with the objective of training crews at airfields to operate the unit before duplicates are supplied to them.

Specifications of Unit

The specifications of the crash truck are as follows:

Engine is of Mack fire apparatus type, six cylinder, with 200 horsepower at 2500 R.P.M. An all-steel cab with seating positions for driver and two passengers is part of the standard equipment.

The pump is a 4-stage centrifugal Hale pump, modified for this special service. Modifications consisting of locking of stages in series making this pump strictly a high-pressure low-volume pump are included. Operating pressure is 600 pounds per square inch, and maximum pressure, 700 pounds per square inch.

Maximum water delivery is 250 gallons per minute. The engine speed at this pump delivery is 1860 to 1900 R.P.M. The pump is provided with one heavy-duty 3-inch discharge valve on each side of the apparatus. In addition, 2½-inch discharge lines to two revolving high-pressure deluge guns located on top deck of apparatus are included.

A 3½-inch suction line is provided from the water tank to the pump, and provision is also made to attach hydrant 2½-inch line to suction side of pump.

The pump is controlled from the driver's seat by the use of a hand lever and roding arrangement to the pump transmission.

The unit carries a 1,000-gallon water tank made of heavy-gauge steel, baffled to five divisions of the tank. Provision

Crash Truck Starting Operation on "Plane" Enveloped by Fire from 300 Gallons of Gasoline

Operations being conducted from lee side of fire, using combination of fog and foam. Fireman at extreme left is getting applicator; two monitor nozzles and two hand lines are already at work.

The 300-Gallon Fire at About the End of Thirty Seconds

It was fully under control in forty-seven seconds. Men operating monitors wear asbestos suits, as the metal-clad crash truck is driven right up to the fire before operations are started.

Mopping Up Remaining Spots of Fire with Foam-Fog. Note Type of High Pressure Nozzle Employed

on the tank for bucket filling or hose line filling through top opening in tank is included.

The unit is furnished with two modified McIntyre deluge guns. These guns are furnished with revolving type turret head mounted on a twenty-six inch high monitor. The gun nozzles are specially designed for high-pressure water fog application or for foam developing use. Nozzles are adjustable for water deliveries from approximately seventy gallons to 180 gallons per minute with pump pressure of 600 pounds per square inch.

Apparatus is also equipped with two Meyers fire guns with adjustable spray nozzle tips. The diameters of tips furnished are 3/16, 7/32, and ¼. Each of these guns is attached to 100 feet of ¾-inch high pressure hose. Hose and guns are mounted in baskets located on top deck of apparatus.

In addition to the two high pressure lines, an additional 100 foot ¾-inch diameter high pressure is furnished equipped with a Rockwood applicator for development of fog protection wall around the firemen or extinguishing fire in enclosed areas.

The equipment listed above may be used for either spray water application or foam application.

In the demonstrations shown herewith, the fuselage of the plane was first drenched with gasoline inside and out. Then four 50-gallon drums on opposite sides of the plane were dumped simultaneously, and the torch applied. The result was a fire of considerable area, and intense heat.

While the maximum gasoline used in either of the two tests above described amounted to 300 gallons, which represents the capacity of a fairly small plane, the unit is capable of operating upon fires involving quantities of gasoline equivalent to those found in the larger planes. Of course, the time required to extinguish the larger fire would be materially longer than required to extinguish the fires described above.

About 500 persons, including a number of fire chiefs and Army officers witnessed these tests. They were carried out under the immediate direction of Captain W. P. Nugent of the Office of the Chief of Engineers. The demonstration was conducted in cooperation with the following: Colonel Robert S. Beard; Lieutenant Colonel Thomas F. Burke; Leiutenant Colonel Rex Gilmartin; Major H. P. Bosworth, Jr.; Major Elmer Haslett; Captain Abrahams, Post Engineer, Fort Totten; LeRoy H. Dehlinger, Fire Prevention Engineer, R. E., R & U Division, Second Service Command. Also present were a number of officials from Washington including W. W. Dean of the Corps of Engineers.

Oil Refinery Swept by Blast and Flames

Following a terrific explosion of a storage tank containing 6,000 barrels of naphtha, fire swept through a large section of the Roosevelt Oil Company refinery in Mt. Pleasant, Mich., on July 13, causing damage estimated at more than $100,000.

The explosion which shook the city at 2 a.m., was followed by a series of smaller explosions, continuing for more than half an hour as flames leaped from one storage tank to another. By dawn, one-third of the plant, including a laboratory was destroyed.

Fire departments from Alma and Clare assisted Mt. Pleasant's volunteer fire fighters.

The refinery has a capacity of 10,000 barrels a day. Its products include a special testing fluid for carburetors of airplane motors, and a rubber solvent.

Left: Crash truck waiting word to start operations from windward side of fire, using fog only. Two hundred twenty-five gallons of gasoline were used in this fire. Right: Extinguishing operations start, using two monitor nozzles, two hand nozzles and one applicator. Fire was brought under control in twenty-one seconds.

SICK LEAVES AND VACATIONS *(Continued from page 461)*

City	Total Pd. Force	Total Man-Days Lost Due to Sickness	% of Total Man-Days of Force	Winter Leaves Compared to Summer	Vacancies Filled by Substitutes	Man-Days Lost by Injuries	Man-Days Lost by Vacations	No. of Men on Vacation	No. on Special Leave	Full Salary Continued During Leave	How Are Absences Investigated
Springfield	72	120	0.5%	W-1860 S-1020	No	20	534	6	1-2	½ salary for sick	Chief
Oklahoma											
Muskogee	46	30		W-20 man-days S-10 man-days	No	120	966	3	0	Full	Dr. Cert.
Oregon											
Portland	557	1028		Equal	Yes		11697	45	5	Inj.—Full pay Sick—30 days	City Health Officers
Pennsylvania											
McKeesport	60	103	.5%		For sick leave	3	840	8		Full. Sal. for vacation & inj.	Chief or City Phys.
Scranton	287	2134	2.8%	W-1894 man-days S-514 man-days	For mil. leave	274	3085	12	0	Sick. or inj.—Full Sal. for 1 yr.	Chief, Dir. of Pub. Health
Wilkes-Barre	112	277	.8%	W-1764 man-hrs. S-1560 man-hrs.	No	117	1680	13	1	Full	Dr.
Rhode Island											
Providence	420				No		5880	39			Chief off.
South Carolina											
Columbia	88	448	1.5%	W-66 2/3% S-33 1/3%	No	29	900	1 from ea. Co.		Full	Chief & 2 Assts.
Tennessee											
Chattanooga	161	1096	1.8%		No	651	4137	15		Full pay for vacation	Officers & City Phys.
Nashville	259	692	.73%		Yes	1279	5180	1 on ea. shift			
Texas											
Corpus Christi	48	56		Equal	Yes	95	1550	4-6		Full Sal.	City Dr.
Dallas	458	1665	1.2%	W-967 man-days S-698 man-days	No	652	6870	20		Sick—30 days Inj.—Full	Dr.'s Cert.
Houston	550				No		8250	27		Sick. or inj. for 60 days; ½ pay after	F. D. officers
Fort Worth	272	2948 man-hrs.	3%	W-426 S-874	Yes	272	3870	11	2-3	Full Sal.	Chief, Dist. Chief or Comm.
Utah											
Ogden	33	10	.09%		No	5	528	2	1		Chief
Vermont											
Burlington	12	194	1.3%	W-167 man-days S-27 man-days	No	154	988	4	6	Full Sal.	Chief or Dep. Chief
Virginia											
Portsmouth	44	95	.6%	W-34 man-days S-61 man-days		0	400	6	0	Sick & Inj. Full Sal.	City Phys.
Washington											
Spokane	154	1180	4.4%	W-6048 S-6888	Yes	874¾	2618	7	0		Pension Bd. Phys.
West Virginia											
Charleston	71	0			No		994	3	0	Full Sal.	Sick Comm.
Huntington	95	482			No	82	1440	12		Full Sal. for inj.	Chief & City Phys.
Wheeling	83	320	1.07%	W-222 man-days S-98 man-days	No	150	1162	6	0	Inj.—90 days Sick.—60 days	Chief
Wisconsin											
Madison	98	295	.84%		No	29	1137	10	2	Full Salary	Co. officers
Racine	75	283	1%	W-216 man-days S-66 man-days	No.	15½	1005	7	0	Inj. & Sick. Full Salary	Chief
* The following replies were received too late to incorporate them alphabetically under the various states:											
Beverly Hills	55	326	2%	W-2472 S-1440	Yes by Off men	215	675	2	1	Inj. & vacation. or sick leave	Chief & city Dr.
Charlotte	138	552	1.2%	W-374 man-days S-178 man-days	No	198	2025	13		Yes	Capt., asst. chief, chief
Dearborn	111	370	1%	W-5736 S-3141	No	17	2442	8		Yes	Dept. phys.
Fort Wayne	152	1015	2%	W-2160 S-52,560 (inc. vacations)	No	114	2280	11		Sick. 30 days; Inj. until recovery	Co. officers
Gary	130	392	1%	¾ less sick leaves in summer	No	74	2470	16	6	Yes	Capt., city nurse or city phys.
Hartford	315	100	.1%		Yes	75	4410	2 from ea. co.			Depy. chief, or phys.
Knoxville	144	204	.4%	W-118 man-days S-86 man-days	Yes	244	2160	10	4	No	Chief officers
Long Beach	258	694	.7%	W-212 man-days S-133 man-days	Yes		3000	14		Sickness & vacation—full	Nurse from Health Dept.
Milwaukee	801	2355.5	.8%	W-1420.5 man-days S-935 man-days	No	1235.5	11625	74		Full	Dept. officers & dept. phys.
Oklahoma City	220	150			No	0	3300	14-20		Full	Ch. officers of districts
Passaic	102	0		Equal	No	0		7	2	Full	City phys.
Tacoma	174	405	.6%	W-3432 S-3720	Yes	191	2436	32		Sick or inj. Full	Pension Bd. Sick Comm.
Tucson	38	140			No	9	362	4		Full	Personnel dir.

New Pumper for Mexico City

Three 1,000-gallon Seagrave pumping engines were built for Mexico City, Mexico. Priorities for these machines were granted by the Board of Economic Warfare. Each machine was dedicated to some heroic fire chief. Shown in front of one of the pumpers are Chief Jose Saavedra, Colonel Merceline Inuretta and Captain Jorg Katthain, who came to the Seagrave factory in Columbus, Ohio, to inspect the pumpers.

DELAYED ALARM BLAMED FOR BIG SAN FRANCISCO PIER FIRE

Naval Units Attempt to Control Fire Without Calling for Help of Municipal Department

By Bob Greenock

THREE separate investigations were launched to determine cause and other aspects of San Francisco's most spectacular and stubborn waterfront fire of recent years which occurred on the morning of May 13.

The Navy said a board of investigation had been appointed to probe the origin of the flames that attacked the apron of Pier 48, loaded with naval stores. At the same time, Fire Chief Albert J. Sullivan of the San Francisco Fire Department ordered Fire Marshal Frank Kelly to conduct a separate investigation and the regional office of the FBI indicated it was making a probe too.

Combustible Construction Speeds Fire

The fire roared through creosote soaked piling on the north apron of the huge pier, 600 feet long and loaded with war cargoes, and sent a gigantic pillar of black smoke hundreds of feet into the air while the flames ate out the underpinning of piles and stringers beneath the apron. Heroic work by firemen and the fact that the pilings and stringers under the pier proper, on which there are two huge sheds running the length of the pier, are of concrete held damage to a minimum.

More than 30 firemen, including Chief Sullivan, were given hospital treatment for smoke inhalation or creosote burns and more than 200 other firemen, sailors, marines and civilians, both men and women, were treated on the scene by Emergency Hospital crews and Navy doctors.

Battalion Chief Philip McCormick, first chief officer to arrive at the fire, later told Chief Sullivan that the fire apparently had been battled by Coast Guard and Navy fire fighting units for some time before the city fire department was summoned and while Navy officials refused to comment, Chief McCormick said when he and his men arrived in response to a box alarm, several Coast Guard and Navy fire fighting craft were already at work on the fire despite the fact that none of them was stationed at that particular pier.

Serious Delay in Alarm

The fire apparently started shortly after 9 a.m. but the first alarm was not given to the fire department until 9:39. At that time Box 2233 was pulled at Fifth and Hooper Streets, about a half-mile away, and separated from the pier by lumber yards, railroad tracks and large industries.

Chief McCormick and the companies responding to Box 2233 found no fire at Fifth and Hooper, nor anyone at the box to direct them. Looking around, Chief McCormick saw the smoke at the pier. He ordered his companies to proceed to that location and while he was on the way, Box 948, Pier 48, was relayed to him over the fire department radio at 9:47.

Meanwhile, Chief Sullivan at his office in the quarters of Engine 34 hearing 948 strike (all pier boxes are "900" boxes) immediately called the fire alarm office to determine if they knew what was afire. He was informed someone had called and reported there was a "ship on fire." Although not due on the box alarm, he and his driver were well on their way when the third alarm was relayed to him by radio. Chief McCormick had called for a straight third alarm response at 9:52.

At 9:54 the air compressor was summoned so that holes could be cut in the asphalt and concrete floor of the apron and circulating pipes inserted. At 10:03 Chief Sullivan called for two additional truck companies followed two minutes later by a call for the rescue squad.

The fire alarm office then moved four truck companies, in addition to the automatic cover-in moves provided on the alarm running cards, to compensate for the extra trucks called to the fire. At 11 a.m. a fourth alarm from Box 948 was sounded. This was followed by a call at 11:21 for the fuel wagon. Last call for the fire was a special call for another truck company at 2:50 p.m. Meanwhile, however, the fire alarm office had moved two more truck companies in from outlying districts and had ordered two engine companies to move into the waterfront area in special moves designed to afford better protection in case of a second waterfront fire.

Air compressor crews from the Pacific Gas and Electric Company aided firemen in cutting holes in the pier apron.

Working at the fire were 17 engine companies, 7 trucks, 1 water wagon, 1 air compressor, 1 rescue squad and two fireboats from the San Francisco fire department; two Coast Guard fire barges and one fire boat; a State fireboat; the Western Pacific's fire tug "Hercules"; and several Navy tugs and small craft equipped with fire pumps.

One of the San Francisco fireboats was ordered to remain in service while at the fire in case of a second waterfront fire.

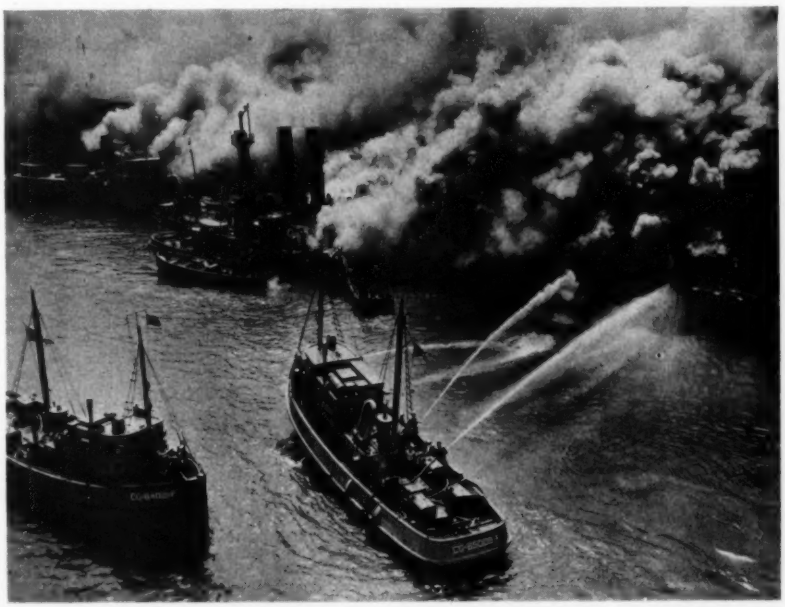
Heavy Smoke Hinders Volunteers

The dense smoke and creosote fumes overcame and inflicted burns on scores. Women employes at the naval stores pier joined with men employes, longshoremen and Coast Guardsmen in carrying out hundreds of boxes and cartons stored in Shed A on the pier. Because of a lack of gas or smoke masks, these people used cloths and rags dipped in water as impromptu masks. Many of them suffered from creosote burns and smoke inhalation. The Navy later said that more than 1000 Coast Guardsmen, including the fire battalion, had participated in the fire fighting and salvage operations.

As the clouds of black smoke belched skyward, thousands of spectators were attracted to the area, many of them already there when the first firemen arrived. Marine guards, armed with pistols and sub-machine guns, patrolled the area.

City police arriving at the scene along the busy waterfront were ordered away by the Marines who refused to let them enter the area because they carried arms.

U. S. Marine officers explained that



Coast Guard and Navy Fireboats Give a Hand at San Francisco Pier Fire

the civilian peace officers attempted to enter the military area wearing their side arms and that military regulations prohibit the entrance of an armed civilian into a military area. Because the policemen refused to "check" their guns, they were denied admittance, the military spokesman admitted. Later on, however, traffic became so snarled that the military asked the police to aid in untangling traffic so fire apparatus and other emergency equipment could get through, the thing they had come there to do in the first place.

Newspaper reporters and cameramen had their difficulties, too, with the military. Despite the fact that all carry identification issued by the local police and military, they were denied admittance to the area until government red tape had been satisfied. While waiting, several photographers prepared to take pictures of the flames and smoke from a point outside the reservation.

One newspaper photographer was fired upon by an over-anxious Marine guard who claimed to have shouted and blown his whistle at the newspaperman. Campbell froze in his tracks as the warning shot whistled over his head. His equipment and pictures, like those of the other photographers were confiscated. Later his equipment was given back and he, with other newspapermen, was allowed to enter the area and report or photograph anything they wished.

Traffic Congested

Because the Marine guards refused to let the police handle traffic, fire apparatus responding to the second, third, fourth and other alarms was unnecessarily hindered in response. Only access to the area is via the Third or Fourth Street bridges. The Fourth Street bridge was out of service because of repairs and traffic jammed so badly at the Third Street bridge, near the Southern Pacific depot, that some fire apparatus was forced to go back to 16th Street and come all the way back into the area by a circuitous route.

Several workmen on a ship being loaded at the dock told newspapermen they smelled "something burning" at least 15 minutes before the fire department was summoned. They confirmed the fact that Coast Guard and Navy craft attempted to fight the fire before the fire department was called.

While no official version was given for the cause, it was believed that a cigarette tossed into bilge oil on the water ignited the oil which floated in on a rising tide and ignited the pier apron.

Fire Discovered by Marine Guard

A Naval spokesman said the fire had been discovered by a Marine Guard who informed the Sergeant of the Guard and who immediately turned in an alarm. He didn't say to whom the alarm was turned in.

Ironically enough, civilian workers, most of them women, in the office at the head of the pier had been visited by the Navy security officer for that area the morning of the fire. He had informed them what to do in case of fire, appointed monitors and had warned them not to get excited when the fire alarm sounded later in the day because there would be a fire drill.

A little later the fire alarm did sound. Some of the employes were loath to leave their work for a drill but monitors insisted. When they got outside, huge billows of black smoke greeted them and they realized that it was the real thing and not a drill. Many of these employes, all civilians, aided in carrying materiel from Shed A as the fire threatened to spread.

Freighters at the pier were moved away by tugs and none was damaged although longshoremen said it was nip and tuck for a while.

The Coast Guard fire battalion responded with land equipment, too, using several trailer pumps and one nearby crew of auxiliary firemen went to work with their 500-gallon pump.

Chief Sullivan later said there was no shortage of manpower and gave unstinting praise to the efforts of Coast Guard fire fighters under direction of Chief (Warrant Bo'sn) O. S. Peterson.

American Red Cross and American Women's Voluntary Services units appeared to aid in the first aid work and later supplied canteen units to give the harassed fire fighters food and drink. More than 1000 men were served by the units.

Chief Sullivan said he had protested that storing of certain materiel at waterfront locations violated city fire laws and explosive ordinances but that the answer was "We've got a war to win."

The chief explained he certainly did not want to be put in the position of doing anything to hinder the war effort and, on the contrary, wanted to do everything he and his department could to facilitate such efforts but that he had certain duties and obligations that made it mandatory for him to file formal protest, at least.

He said he was particularly worried about huge stores of gasoline and oil, stored in drums, at a certain waterfront location. He said he had been informed by military authorities that they would be moved to a less dangerous location but that nothing had been done about moving them yet.

OILED FELT CAUSES TWO FIRES BY SPONTANEOUS IGNITION

Removed After Shoe Factory Fire It Re-Ignites at Fire Station

THE New York Fire Department was called to a fire on July 17 which was burning on the tenth floor of a seventeen-story brick-cement building occupied by a shoe factory.

Upon arrival of the department, the floor was found charged with a pungent smoke of yellowish color which was produced by a small fire. A standpipe line was used, and the fire was quickly brought under control.

The fire originated in a case of leather substitute in a stockroom at the rear of the tenth floor, and communicated to bundles of leather, and was there confined and extinguished. When the firemen reached the cases containing the leather substitute, they found the source of the heavy pungent smoke. It was escaping from the cracks of the case involved.

After the fire was extinguished, and suspecting spontaneous ignition of the contents, the remaining five cases were removed to the yard in the rear of a fire station, on orders of Deputy Chief William Taubert of the district. These cases were placed on skids and separated by spacers so as to permit free circulation of air around them, to keep them as cool as possible. A waterproof cover, or tarpaulin, was placed over the pile and with about five feet of clearance between the top case and the tarpaulin. The captain of the fire company was instructed to have a man make periodic checks on the cases in case re-ignition should occur.

On the following day, July 18, the material in the cases did re-ignite. The engine company, being right at hand, got water on the fire promptly, but it took nearly thirty minutes to completely extinguish the blaze. Before the fire was out, the contents of the cases had been largely consumed by fire.

The material, in sheets of approximately one-quarter inch in thickness, was packed sixteen sheets to a case. It was made of compressed felt, apparently of vegetable fiber, impregnated with an oil with the characteristic smell of linseed oil. Whether or not additional ingredients were included in the materials will not be known until final tests have been made on it by the Explosives Bureau of the Fire Department.

The leather substitute was used in the manufacture of a high grade of women's shoes.

Fire Protection Engineering Scholarships Given

Eight boys from Chicago and its suburbs have won themselves a free college education.

They have each been awarded a fire protection engineering scholarship, valued at $1200, which pays their tuition for four years of college, to Illinois Institute of Technology. They won the scholarships in competitive examinations open to all high school graduates.

The eight winners include: Robert E. Bradford, Edgar Eudeikis, Donald J. Leseth, William Nord, William Sebastian, Damien J. Ward of Chicago; Warren C. Brockmeier of Oak Park and William W. Zechel of Park Ridge.

The four-year scholarships awarded these boys are annually given by the Western Actuarial Bureau. They enable the students to study at the nation's only department of fire protection engineering at Illinois Tech and are continued to assure the fire insurance companies an adequate flow of professional personnel.

HAWAIIAN FIRE DEPARTMENT A COSMOPOLITAN GROUP

Personnel Drawn from Many American Cities; Novel Problems Encountered

By Pvt. William H. Cunningham, Jr.
Public Relations Office, U. S. A.

A FIREMAN who steps from a civilian force into one maintained by the Army will find a number of things missing.

For one thing the alarms are answered in almost complete silence.

There are no clanging bells because they sound like gas alarms. There are no screaming sirens because they signal air raids. And that old traditional fire engine red has been painted over with the Army's olive drab.

A group of ten former civilian firemen who now fight fires in the Army Air Forces uniform make up part of a ninety-man force at an air base in the Hawaiian Islands.

What do they miss most? It's hard to say but when Pvt. Thomas Morgan received some pictures from his former buddies in Kansas City, Mo., showing one of their winter fires and everything covered with ice it made all the old-timers homesick.

No Need for Long Ladders

Hawaiian architecture stays close to the ground so there is little call for long ladder work. Few of the bungalows have basements or central heating systems so that the well known furnace fire seldom enters their lives.

It took the war to bring them together for, like most firemen, they had taken jobs with their home town departments and had no intentions of changing during peacetimes.

The experience of the veterans is welcome in the Army force but it also presents some minor problems. Newport, R. I., for instance, does not always see eye to eye with Kansas City or Newark, N. J., on such things as the proper way to smash a window or to pick up a ladder. Terms differ too and what one calls a shot of hose, another a length of hose and a third a section of hose are all the same size. One school insists that the business end of a hose is the nozzle. Another insists just as strongly that it is a play pipe.

Many States Represented

Besides Pvt. Morgan, who was with Kansas City eight years, there are Sgt. Fred Harrington, eleven years with Newport, R. I., and three with the Navy yard there; Pvt. James Eakley, eight years with Summit, N. J.; Pvt. Joseph Cook, five years at Newburgh, N. Y.; Pvt. Francis Hanlon, six years with Pawtucket, R. I.; Pvt. James Nolan, two years with Newark, N. J.; Pvt. Charles A. Watson, fourteen years with Hopedale, Mass., where he was assistant chief; Pvt. Edward Dunn, three years with the Bethlehem Steel Company's fire department at its Brooklyn, N. Y., shipyard; Charles Norris, five years with Shenandoah, Ia., and Pvt. John E. Zygmont, five years with Greenwich, Conn.

There is also Chief Ross I. Ewing, a civilian, who is a retired member of the Los Angeles fire department. And the strictly Army school of fire fighting is represented by Lieutenant Eugene Bauer, Army head of the department.

One thing that remains the same in the Army is the method of passing time between alarms. The same pinochle, cribbage and hearts games go on. At their headquarters there is also the traditional brass slide pole from the second floor.

And whenever the yearning for a sight of that old fire engine red becomes overpowering, the veterans can look underneath the fenders of the trucks. That part has not been painted over.

Photo by Hawaiian Army Air Forces

Air Force Fire Department

Former civilian firemen at the same job now for the Army Air Forces at an air base in Hawaiian Islands. Starting with Pvt. Joseph Cook, Newburgh, N. Y., in the driver's seat and clockwise around the circle they are Pvt. Thomas Morgan, Kansas City, Mo.; Sgt. Fred Harrington, Newport, R. I.; Pvt. Charles Norris, Shenandoah, Ia.; Pvt. James Eakley, Summit, N. J.; Pvt. Charles A. Watson, Hopedale, Mass.; Pvt. James Nolan, Newark, N. J.; Pvt. Francis H. Hanlon, Pawtucket, R. I.; Pvt. John E. Zygmont, Greenwich, Conn., and Pvt. Edward J. Dunn, Brooklyn, N. Y.

Texas Firemen Meet

The State Firemen's and Fire Marshal's Sixty-seventh Annual Convention was held in Waco, Texas, on June 8-10.

Matters pertaining to both peace and wartime fire fighting were the principal topics discussed and speakers included the Hon. Coke Stevenson, Governor of Texas; General L. F. Guerre, Director of Internal Security Division, Eighth Service Command, U. S. Army, Dallas; Lt. Colonel Paul G. Bell, Chief, Continuous Security Branch, Eighth Service Command, U. S. Army, Dallas; Mr. George Carlson, Federal Bureau of Investigation; Professor E. L. Williams of the Vocational Educational Activity; and Colonel Leroy E. Nelson, Commanding Officer, Camp Wallace, Texas.

Officers presiding at this convention were Chief Chester Cherry, Ballinger, President; Chief Hugh Nations, Crosbyton, First Vice President; T. E. Lewis, Electra, Second Vice President; Chief Royce Hogg, Gilmer, Third Vice President; G. F. Dohrn, Mission, Fourth Vice President; Olin Culberson, Edna, Secretary-Treasurer, and Louis Scholl, Gonzales, Assistant Secretary.

Amusement Park Gutted by Fire

Fire that started in the open-air dance pavilion of Fairyland Park in Kansas City, Mo., roared through the wooden framework of sixteen out of twenty-three concessions of the twenty-year-old amusement center, on June 28, and left them blackened ruins.

Between 10,000 and 12,000 persons, an unusually large Sunday crowd, left the park in an orderly manner.

After fighting the flames for two hours, firemen kept them from spreading to the other remaining concessions.

The fire is believed to have started beneath the orchestra platform. The flames burned power lines and plunged the entire area, including park and surrounding homes, in darkness.

The park has an alarm system controlled in the manager's office. As soon as he learned of the blaze, he flashed a red light in all of the concessions. Cashiers quickly took their money boxes to the office while park employees began herding the people out of the park.

Five large transformers on poles back of the dance pavilion burned. Flames spurted several feet when fire streams struck the oil in the transformers.

Damage was estimated at $500,000.

CLEVELAND STAGES SHOW OF AUXILIARIES IN ACTION

Coast Guard Participates in Big Demonstration of Auxiliaries and Apparatus

By Emmet H. Byrne
Battalion Chief, Commanding Bureau of Fire Education
Cleveland, Ohio

CLEVELAND, like other cities throughout the United States and Canada, has been engaged in quite an extensive training program of auxiliary firemen.

We have been handicapped by lack of necessary training equipment and appliances and have had to improvise a lot of it. We realize the enormous demand from all over the country for this equipment and the importance of equipping our coastal area first.

This shortage of equipment makes it very difficult for the Civilian Defense officials and the officers and members of the fire departments in charge of this training to keep up the interest and spirit of the auxiliary firemen.

These men want action, practical training, and rightfully so, instead of listening to theoretical methods of controlling emergencies that are brought about by fires, either from bombing or otherwise.

For this reason a demonstration was given by the auxiliary firemen of Cleveland under the direction and supervision of the city firemen. The United States Coast Guard fire boats and crews also took an active part in it.

Approximately 400 auxiliary firemen reported for this affair. There were ten pieces of auxiliary apparatus, including four skid mount pumping units, two front mount pumping units and four trailer pumping units. Along with them were two regular department pumpers, one hook and ladder truck, a 100-foot aerial with two ladder pipes and one hose company with an extra supply of hose. The Coast Guard supplied one of their regular fire boats.

All pumping units were set up to draft. All suction connections, hose layouts, connections to apparatus, nozzles, etc., running of the auxiliary apparatus, anchoring nozzles and other duties were performed by the auxiliaries exclusively, under the direction of the regular firemen.

These auxiliaries performed their work speedily and efficiently. The work was somewhat different from the training they had had at the engine houses during the past year, but they showed they could assist in a situation requiring this kind of equipment and work.

Three deck pipes were operated from the fire boat, discharging approximately 4,000 gallons per minute through a 3-inch, a 2-inch and a 1½-inch nozzle tip. This work was performed by members of the Coast Guard under direction and supervision of their own officers.

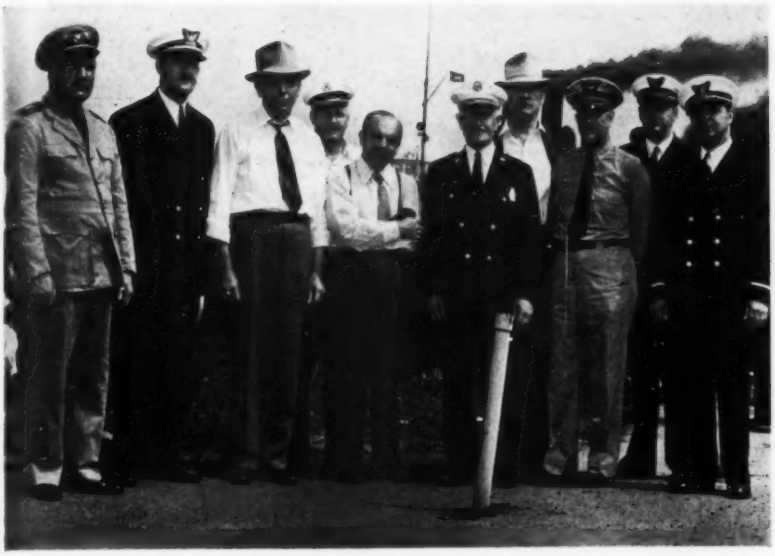
Three Multiversal nozzles with 1¾-inch tips, two ladder pipes with 1½-inch nozzle tips, ten other lines with 1¼-inch tips, along with three lines from the fire boat, were discharging water at the

Coast Guardsmen Extinguishing an Oil Fire Using a Fog Nozzle Attached Directly to the Controlling Nozzle

Streams in Operation

The streams from the ladder pipes can be seen in upper right hand corner. The streams from the fire boat are not visible.

Ladder Pipes in Use



Present at the Demonstration

Left to right are: Warrant Yeoman John P. Needham, Ensign Milton P. Engelbrecht, Second Assistant Chief Joseph E. Sweeney, Battalion Chief Emmet H. Byrne, Director of Public Safety Frank D. Celebrezze, First Assistant Chief James Nimmo, Fire Chief James E. Granger, Captain of the Port G. W. Cairnes, Lieutenant (j.g.) F. J. MacPherson and Ensign G. O. Glomb.

same time with auxiliary firemen operating the auxiliary apparatus. Approximately 12,000 gallons per minute of water were being discharged for a period of three-quarters of an hour.

While this is not an exceptionally large amount of water, considering the amount of water used on some large fires, still it demonstrates the necessity of training the auxiliaries in this work.

In addition we had an iron tank nine feet in diameter and three feet deep. We put some crank case oil and gasoline in it and ignited it. We gave the auxiliaries practice in extinguishing these fires with fog nozzles and foam.

This demonstration was conducted by the Bureau of Fire Education in charge of Battalion Chief Emmet H. Byrne, assisted by Captain John Denk, Lieutenant Alfred Colbert, Lieutenant A. Radtke and firemen Clyde Taylor and Vincent Rhinehardt.

Fireman Shortage Held Peril to New York City

The New York City Fire Department is suffering the greatest manpower shortage in its history, Commissioner Patrick Walsh declared recently.

Commissioner Walsh stated that "The Fire Department has the worst shortage of men in its history because of the stricter draft regulations in this war compared to the last war. I wish the Government would release the men that were in the Fire Department who are thirty-eight years of age to us as an essential war work at the present time."

It was also revealed that the department is considering the enlistment of the services of men who hold Selective Service classification in the 4-F group for the temporary jobs as firemen.

At the headquarters of Engine Company 31, Lafayette and White streets, forty-two candidates for appointment to the job of temporary firemen were inducted. The job pays $2,000. The emergency list from which the men are drawn is made up of 120 names of individuals eligible for police or fire work.

Commissioner Walsh estimated that the fire department is still short 1,200 men, which includes 600 who are in military service.

Fire officials expressed anxiety for the safety of the city in the event of a large fire in view of the shortage of manpower.

Martin Appointed Deputy Director of OCD

Appointment of John B. Martin as Deputy Director of the Office of Civilian Defense was announced recently by Director James M. Landis. Mr. Martin has been assistant to the Director and Chief of the Administrative Branch of OCD.

Before his appointment as assistant to Director Landis in February, 1942, Mr. Martin has served on the staff of the Securities, Department of Commerce, State of Ohio. He also had engaged in private practice of law in Cleveland.

New Fire Engine for Miami Beach, Fla.

Miami Beach, Fla., recently received a new fire truck built by Pirsch.

The thirty-four-foot quadruple-type truck is powered by a Waukesha 6-cycle, 200 hp. engine.

Chief improvement in the design is a truck-wide leather covered seat directly behind the driver's seat on which the entire crew rides.

The machine has a 750-gallon pump and carries two 200-gallon booster tanks to be used for fighting brush fires or fires distant from a water line.

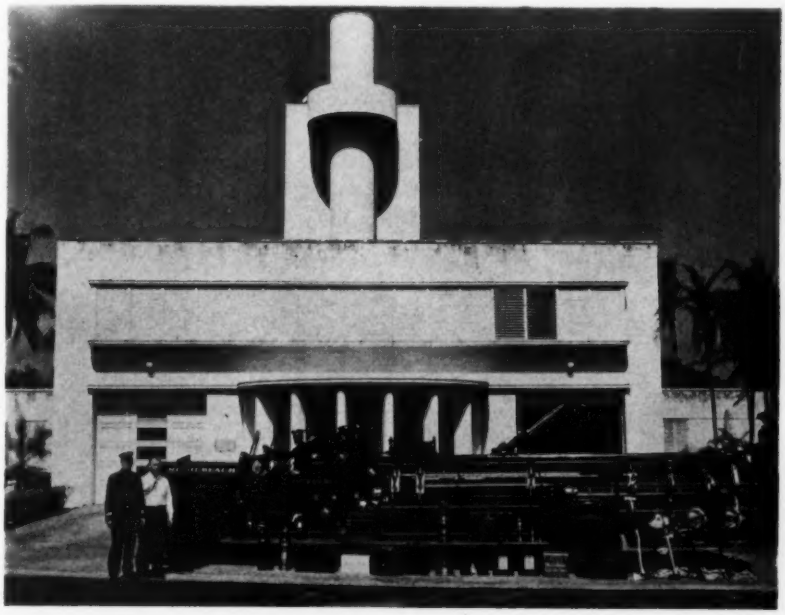
It is equipped with 1,000 feet of 2½-inch hose, 200 feet of booster tank hose, 30 feet of hard suction hose, 100 feet of lifeline rope, three 50-foot lengths of various size lines, and 8-foot to 45-foot portable ladders. It also has four salvage covers.

Flood lights, movable in any direction, were added on each side, top and rear of the truck. Two large flood lamps are mounted on the rear running board. These may be removed from the truck and carried to suitable spots for use, and are lighted by a portable generator.

In addition, the truck carries large and complete first aid kits, acetylene cutting torches, electric saw, brooms, mops, pitchforks, shovels, oxygen breathing masks and two all-service masks.

It also carries four carbon dioxide extinguishers, two foam and two five-gallon back-pack pump cans.

It was built under the direction of Chief J. S. Stephenson, who has been Chief of Miami Beach's fire fighters for twenty-three years.



Miami Beach's New Quadruple Pumping Engine

IMPROVEMENTS IN APPARATUS BOLSTER NEW HAVEN DEPARTMENT

New Fire Boat Put into Service; Fire Apparatus Painted White to Comply with Blackout Restrictions

By Thomas F. Magner

IN an effort to further bolster his Department in event of enemy attack, Fire Chief Paul P. Heinz of New Haven, Conn., has made various changes during the past year.

"Being a large coastal industrial city with almost all our factories going 'all out' on war production work, we are a likely target for enemy bombers," said Chief Heinz recently. "And our fire-fighting problems here are quite different from those in cities of a like size, both in area and population."

The City of New Haven, home of Yale University, is 300 years old, with many narrow streets and antiquated structures and divided by both railroads and waterways.

$800,000 Annually

"The $800,000 spent annually in keeping our Department running may seem high," cited Chief Heinz, "but on the other hand it must be realized that this amount covers the protection of $450,000,000 of real and personal property, most of it contained in twenty-two square miles of congested territory."

Pointing to the problem of manpower, Chief Heinz stated that the New Haven Fire Department has lost fifteen of its regular men to the armed service since Pearl Harbor.

"Our problem of replacing these firemen hinges upon the fact that they have all been assured of their old jobs when they return from the war," Chief Heinz revealed. "If replacements are made now, there will be an additional problem facing us of financing these men when the others return."

Many Improvements Made

Among the improvements made in the New Haven department is the painting of all apparatus white with black trimmings and the change from the black leather helmets to light steel helmets. Black rubber raincoats now bear broad white stripes. "Smokey," a black and white Dalmatian pup, is the latest addition and is being trained to guard the apparatus.

Government dimout regulations and wartime blackouts have brought many necessary changes, among them the easier-discernible black and white outfits.

Fireboat Serves Industries Along the Waterfront

A highly efficient fire boat, the only one in New England outside of Boston, is now in service at New Haven's city wharf ready to combat waterfront fires. A late model Seagrave triple combination pumper has been remodeled into an emergency unit and stationed at No. 12 fire house on Crown Street. This unit is equipped with all latest emergency appliances, including a power amplifier with loud speakers. Men assigned to this Company are trained in first aid work and in the use of all equipment.

Quadruple Pumping Unit in Service in New Haven

New Haven's New Fire Boat Tested for Performance

Apparatus Converted to Defense Unit

Another addition is a spare hose wagon converted into a deck-gun wagon and a defense unit, a photo of which is shown in the accompanying article. At the present time the New Haven Fire Department consists of 284 men. In addition, 200 auxiliary firemen have been training weekly in fire fighting, ladder and hose work and special instruction on the extinguishing of incendiary bombs. Recently a request by Chief Heinz for 10,500 feet of 2½-inch hose and 5,000 feet of 1½-inch hose was granted by the Fire Commissioners.

New Equipment Purchased

During the year of 1942 the Department spent $45,000 on new equipment and alterations and the sum of $50,000 is being asked for this year to pay for the conversion of Washington School into a central fire station.

New Haven has also cut down its number of false alarms which have been numerous in recent years, according to

Defense Unit Rebuilt from a 1920 Hose Wagon

records in the Bureau of Fire Alarms. Apparently the reason lies in the small sign on each fire box: "THINK—and you WON'T pull a false alarm. Firemen and others may lose their lives through false alarms."

"Fire Triangle" Simplifies Instruction

Fundamentals of firefighting are more readily grasped by employe trainees in wartime classes conducted by Commonwealth Edison Company, Chicago, Ill., since the adoption of a new visual demonstration device developed by two members of the utility's safety division. This "fire triangle," as it is called by its co-inventors, Henry W. Lueck, assistant superintendent, and Robert F. LaMar, enables the instructor to show his students in a dramatic, lucid manner how the elimination of any one of the components of fire—fuel, heat and oxygen—will extinguish flames.

The sides of the triangle represent these three elements. As the instructor, in the course of his lecture, removes or loosens each of them, a circular translucent panel lights up and indicates the methods employed to eliminate the fire component under discussion. Simultaneously, the flames in a burning building, simulated in a central vertical panel, are extinguished.

For example, when the side of the triangle marked "Oxygen" is removed, its corresponding panel shows that a fire can be put out by smothering with dry powder chemical, carbon tetrachloride, foam, or carbon-dioxide gas. Similarly, the device reveals that flames can be extinguished by dissipating heat with water, or by shutting off the fuel supply.

Electrical features of the "fire triangle" are operated by switches which open and close as the sides are disengaged. The illusion of fire and smoke is achieved in the central panel through the use of an oscillator disk revolved by the heat from a small light bulb. A mirror projects the effect of flickering flames through the transparent screen.

An Aid to Wartime Fire Fighting
Henry W. Lueck (right) and Robert F. LaMar, of Commonwealth Edison Company, Chicago, developed this "fire triangle" as a visual aid to wartime fire fighting instruction. Embodying translucent, descriptive panels which light up at the appropriate moment in the lecturer's remarks, the device reveals in a simple manner how the elimination of any one of the three components of fire—fuel, heat and oxygen—will extinguish flames.

Chief Michael Lawton Retires

Michael W. Lawton, Chief of the Middletown, Conn., Fire Department for the past 13 years, retired on July 17 and two days later accepted the appointment as Fire Co-ordinator for the State of Connecticut under the State War Council. Ex-Chief Lawton, one of the best known fire officials in Connecticut, succeeds the late Micheal T. Keena of Hartford, who died on May 27, last.

Fire Co-ordinator Lawton's office will be at Hartford and his work in checking over all OCD equipment will take him to all cities and towns in the state. His duties also are the dispatching of apparatus and personnel in case of fire from any act of war, sabotage or threat of war.

Ex-Chief Lawton served for 39 years in the Middletown Fire Department. In March, 1904, he entered the Department as a volunteer fireman. On October 1, 1907, he was named a paid driver of the horse drawn wagon and driver of the motor apparatus until August, 1928, when he was named to the newly-created post of Deputy Chief.

Following the death of Chief George S. Pitt in 1930, Lawton was promoted to Chief of Department. Many changes in the interests of the Middletown firemen have taken place under Ex-Chief Lawton's regime.

For several years past, Mr. Lawton has been affiliated with practically all of the firemen's organizations. He served as President of the Connecticut Fire Chief's Club, the Executive Committee of the Connecticut State Firemen's Association, three terms of State Vice-President of the New England Fire Chiefs' Association and was elected President of that association at this year's convention held on June 22, 23 and 24 in Rutland, Vermont.

When the Middlesex County Fire Chiefs' Emergency Plan was organized, Ex-Chief Lawton was named as its first President. He is also a member of the State Advisory Board appointed early in the war by State Police Commissioner Edward J. Hickey.

THOMAS F. MAGNER

Fire Losses Higher

The estimated destruction by fire in the United States last year based on losses paid by member companies of the National Board of Fire Underwriters amounted to $314,295,000, an increase of 3.4 per cent over 1941. This figure is within one-quarter of one per cent of the total of the estimated incurred fire losses reported monthly.

In the table of fire losses since 1875, herewith, the Committee on Statistics and Origin of Fires of the National Board have incorporated a column "Index of Fire Losses" which, with 1926 as a base, indicates the trend of losses adjusted for fluctuations in commodity prices and for variations in amount of property exposed to loss. This presents an interesting picture of the fire loss in real values as contrasted with monetary values.

ANNUAL FIRE LOSS IN THE UNITED STATES FOR SIXTY-EIGHT YEARS — 1875-1942, INCLUSIVE

(Previous to 1916 figures were obtained from the Records of the Journal of Commerce, deducting the Canadian losses.)

YEAR	AGGREGATE PROPERTY LOSS	INDEX OF FIRE LOSSES* 1926 = 100	YEAR	AGGREGATE PROPERTY LOSS	INDEX OF FIRE LOSSES* 1926 = 100
1875	$78,102,285	.....	1909	188,705,150	105.9
1876	64,630,600	.....	1910	214,003,300	112.2
1877	68,265,800	.....	1911	217,004,575	110.9
1878	64,315,900	.....	1912	206,438,900	102.5
1879	77,703,700	.....	1913	203,763,550	98.0
1880	74,643,400	.....	1914	221,439,350	104.1
1881	81,280,900	.....	1915	172,033,200	77.3
1882	84,505,024	.....	1916	258,377,952	103.6
1883	100,149,228	.....	1917	289,535,050	103.1
1884	110,008,611	.....	1918	353,078,876	110.1
1885	102,818,796	.....	1919	320,540,399	91.6
1886	104,924,750	.....	1920	447,886,677	99.1
1887	120,283,055	.....	1921	495,406,012	135.4
1888	110,885,665	.....	1922	506,541,001	123.0
1889	123,046,833	.....	1923	535,372,782	110.9
1890	108,993,792	.....	1924	549,062,124	115.6
1891	143,764,967	.....	1925	539,418,184	109.8
1892	151,516,098	.....	1926	561,980,751	100.0
1893	167,544,370	.....	1927	472,933,969	88.3
1894	140,006,484	.....	1928	464,607,102	84.4
1895	142,110,233	.....	1929	459,445,778	79.0
1896	118,737,420	.....	1930	501,980,624	94.0
1897	136,354,575	.....	1931	451,643,866	89.8
1898	130,593,905	.....	1932	400,859,554	88.6
1899	153,597,830	.....	1933	271,453,189	62.1
1900	160,929,805	143.6	1934	271,197,296	56.5
1901	165,817,810	139.1	1935	235,263,401	47.9
1902	161,078,040	133.5	1936	266,659,449	56.1
1903	145,302,155	114.9	1937	254,959,423	52.1
1904	229,196,050	168.9	1938	258,477,944	54.4
1905	165,221,650	113.8	1939	275,102,119	57.7
1906	518,611,800	342.8	1940	285,878,697	57.3
1907	215,084,709	125.7	1941	303,895,000	56.1
1908	217,885,850	129.7	1942	314,295,000	†

*Adjusted for fluctuations in commodity prices and for variations in amount of property exposed to loss.
†Not available at time of going to press.

June Fire Losses

Estimated fire losses in the United States in June were $26,854,000, an increase of $4,444,000 or 20 per cent over the total for June, 1942, it was announced by the National Board of Fire Underwriters. The estimates are based upon incurred losses reported by members of the Board, plus an allowance for unreported and uninsured losses.

The June losses represented a decrease of eight per cent from losses of $29,297,000 reported in May of this year. Fire losses for the first six months of this year are estimated at $190,514,000, an increase of $20,022,000 over the total of $170,492,000 reported for the first half of 1942.

THE "SIDEWALK FIRE CHIEFS"— WHY NOT GIVE THEM A BREAK?

Here's an Up-to-the-Minute Solution to an Age-Old Problem

To the Editor:

I am enclosing a clipping from the June 8, 1943, issue of the "Daily Local News" published in West Chester, Pa., which I thought might be of some interest to the readers of FIRE ENGINEERING. *The writer was prompted to write it as an aftermath of the serious furniture warehouse fire in that city on June 2, damage from which was estimated at between* $100,000 *and* $150,000.

Sincerely,

WILLIAM McD. BARRETT, *Chief,*
Downingtown, Pa.

AN organized effort should be made in the near future to popularize West Chester fires. A fair size crowd can be recruited at almost any time, but several suggestions, if effected, will make West Chester fires the most popular fires in the county, perhaps even in the State," writes a fireman who has had to contend with crowds at fires.

The Most Pressing Need

The most pressing step which should be taken is a movement for the comfort of the "fire fans." With no seats available and standing room at a premium, something must be done immediately or the crowds will be unable to remain throughout the entire fire. This condition can best be remedied by arranging folding chairs before the hose is unloaded. If the fire company will only co-operate folding chairs can be rushed on the fire truck itself to the scene of the fire. If this is impossible, the least that they can do is to send a special truck with the engine so that the chairs can all be arranged before the fire-fighting begins. Spectators should by all means have an opportunity to be seated before the apparatus is unloaded.

Probably the best of all suggestions would be to have a truck precede the apparatus so that chairs could be set up and the spectators seated before the firemen annoy the crowd by moving in and out with equipment. There is nothing more annoying to the average fire-fan than to have a good place against the truck and on top of the hose, only to lose this advantageous position because of some unfeeling fireman and his equipment.

Firemen are sometimes so rude as to push through the crowd and have been even known to hurry right past a group of ladies without saying "Thank you" to the ladies individually. Chairs properly placed and properly elevated before the fire would enable the firemen to place the fire equipment where it will interfere the least with the public, thus avoiding endangering the crowd or even causing the slightest discourtesy to the ladies.

It has been suggested that spectators who plan to stay the longest at the fires should be given ringside seats, and the chairs, although not necessarily of the reclining type, should be made as comfortable as possible. Fees, expenses, and problems arising in connection with this venture can best be settled later by the local company, but the first and most important step is to sweep away all obstacles and priorities so as to get the much needed chairs.

Although several other changes would make fires more appealing, it is proper here to state one more much needed safety precaution. Spectators, in order to see, have for years been forced to stand on the curved surface of a slippery hose thus endangering life and limb. A square hose would help those who have to see and be a comfort to those who insist upon standing. The use of the square hose would enable even the shortest people to see and those who like to stand can still do so without running the danger of broken bones, sprains, bruises, or fallen arches. A happy and protected crowd will mean more exciting fires and the firemen will have a chance to fight the fires instead of the crowds. Anyone ever having had a fire in his home will appreciate the advantages of this new system over the old method of trailing a hose through the crowd in search of the apparatus.

For those fans who keep a safe distance back of the engine and give the firemen a chance to work, we take off our hats!

Let the Department Supply the Chairs

Left: Let Your Best Men Serve as Ushers.
Right: Square Hose Will Help the Shorter Fellows.

HIGH PRESSURE FOG FOR FIRES USING 600 P. S. I. AT NOZZLE

Some Facts About the New Bean Pressure Unit

By R. G. Pulver,
Fire Apparatus Division,
John Bean Mfg. Co., Lansing,
Mich. and San Jose, Cal.

FOR a number of years much has been said about high pressure and high pressure fog. Pressure of around 150-200 pounds was considered high pressure and was high pressure when compared to ordinary pressures. That some 200 pounds pressure does a better job than low pressures.

R. G. Pulver

On the other hand, the pressure delivered by Bean high pressure unit is giving 600 pounds pressure at the gun tip. At 600 pounds pressure, properly used, the water is made to do ten to thirty-five times what it would do in the form of a soldi stream, and at the same time there is a tremendous reduction in water damage. This reduction goes down as low as 1/35 of that of the solid streams. On a great many fires there is no visible water damage at all and no water on the floor or ground.

This ultra-high pressure fog for fire fighting was originated by the John Bean Manufacturing Company, Division of Food Machinery Corporation, of Lansing, Michigan, a number of years ago.

Later they started to develop it further and were making satisfactory progress when the war came along resulting in the ban on the sale of fire trucks for municipal use without exceptional priorities.

About this time the Army, Navy and Marine Corps presented their problem of gasoline fires. They outlined in general what they needed in fire trucks. High octane gasoline from plane crashes, often in large quantities in combination of pools and spread out thin over large areas, with a crashed plane in the middle of it, was a fire problem that had to be solved.

Bean succeeded in giving them help, and today almost the entire plant capacity is used in the building of crash trucks.

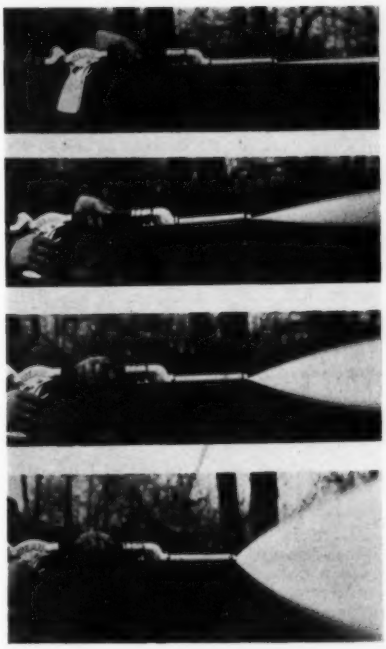
It is believable that if high pressure fog will control gasoline fires it will give a good account of itself on structural fires.

The fine atomization produces billions of minute droplets which expose water surfaces to the fire for absorbing heat. It is almost as fine as cold steam when these fine water droplets crack open from exposure to heat, just before turning to steam. Having absorbed its maximum amount of heat, and having passed off in the form of vapor, there could be little or no water left to cause water damage as would be the case of flooding with solid streams.

Of course it is realized that it would be impossible to direct the gun so accurately into the flame or so carefully open and close the gun that you use exactly the amount of water required to put the fire out but that is something to come as close to as possible and will be developed from experience as so many firemen have done already.

Pressure breaks the water up for heat absorption as just stated and during the process of heat absorption you create a smothering action as a result of the steam created which is a vital factor in subduing the fire. This is extremely valuable in a closed room fire.

Pressure gives us velocity which adds to the previously mentioned features of cooling and smothering, the characteristics of partially blowing the fire out.



Adjustments from Straight Stream to Full Fog With Bean Fog Fire Fighter Gun

It has been said many times that any fire can be blown out if you have enough blowing capacity. Of course, there is not enough blowing capacity here, but it helps.

Rapid Replacement

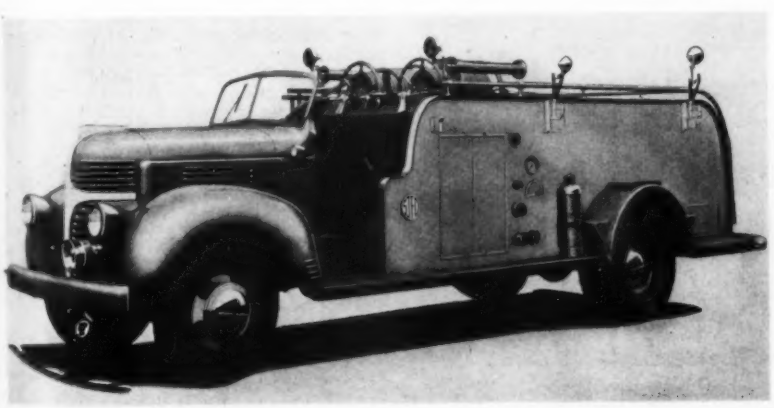
In addition to the above, high pressure gives you rapid replacement of the water fog that has been expended. In a closed room this amounts to packing the room of fog, thereby creating a density of fog that is sufficient to quench the fire. Outside on windy days this high pressure gives carrying power to the fire and constant replacement of the used up fog, in spite of the wind.

Pressure gives another aid which is penetration, and in some cases, demolition. When fog is used and closely held together in the form of a carrying stream or straight stream it has the power to reach the fire from a safe distance and to penetrate into debris, into partitions as well as the cracks in charred wood to get to the base of the fire. It will knock off charred wood to get at hidden fires.

Protection from Heat

Firemen who handle high pressure guns on fires tell us that they give them great protection from the heat and greater visibility in front. At the same time the velocity of the fog brings in fresh air from behind them and gives the fireman a chance to go in. Naturally this blast of fog pushes the smoke ahead and out so that it is replaced by fresh air from the rear. They often tell of clearing the smoke out of a room or basement in a few seconds with the fog.

Speed in getting in to fight the action is just as important as any part of fire



Bean Fog Fire Fighter Which Discharges 60 GPM at 600 Pounds Nozzle Pressure

fighting. In carrying your own water supply and high pressure with you, you are actually fighting the fire within a few seconds after arrival. With ten to thirty-five times the efficiency with 600 pound fog you prevent the spreading of the fire over the entire area as it can not grow on one side while you are working on the other because you give it a preliminary going over quickly and knock it down. On many fires that would require hundreds or even thousands of gallons of water in the form of solid streams, the fire has actually been extinguished before the 2½-inch line could be laid and with only a very small portion of that amount of high pressure water. If these fires had not been knocked down by high pressure, they would have spread rapidly and much more water would have been needed by the time the 2½-inch line was ready.

Comparison of High and Low Pressure

Here is a comparison of high and low pressure water on the same fire. "On a certain rural fire a low pressure booster pump unit with 250 gallons of water arrived at the scene of the fire several minutes ahead of the high pressure unit with 300 gallons of water from another station. It was a one-story frame building about thirty by forty feet, insulated with sawdust and hemlock boards. The entire building was afire and the booster put all of its 250 gallons of water on it with little effect. About the time they ran out of water the high pressure fog unit put two lines into action, knocked the fire down in thirty seconds and cleaned it up and had water left out of their 300 gallons."

You may have been wondering just how large a fire can be put out with high pressure. Frankly, it is not known because every fire that has been tackled so far with a 60-gallon high pressure unit has been controlled.

Trigger Control

The Bean fog fire fighter gun is trigger controlled. The trigger is usually held in the right hand and the barrel which controls the adjustment, in the left hand. Any kind of a spray that may be needed is available by turning the adjusting barrel.

The body design of the Bean high pressure fog unit is to be standardized and it will be made up for various standard trucks:

Truck—Standard 1½-ton of any of several makes

Drive—Power takeoff of standard make

Tank—300 or 400 gallons

Pump—60 GPM at 600 pounds gun pressure

Hose—Probably two 250-foot lengths ¾-in. high pressure.

Guns—Two standard fire fighter guns of 30 gallons each.

List of Approved Fire Equipment Published

Publication of a new revised list of approved fire protective equipment, with special notes regarding the availability of particular devices under wartime scarcities, has been announced by the Factory Mutual Laboratories of Boston, Mass.

Some types of extinguishers and other devices are no longer obtainable. Other types are being manufactured under Emergency Alternate Specifications designed to conserve critical materials. Such of these alternative devices as have been approved for the war emergency are indicated by a new marking on the device, consisting of the letters EAS and the year of manufacture, in addition to the familiar FM in a diamond.

This is the fifty-sixth edition of the approved list, which is issued annually and is based on rigid laboratory tests and on the observation of devices in actual use in manufacturing plants. This testing and listing service is conducted to provide reliable information on devices which are essential in plant fire protection.

Firemen Receive Awards for Heroism

Nine San Francisco firemen recently received meritorious conduct awards from the Board of Fire Commissioners for acts of bravery performed during the first eight months of 1942.

Four hosemen, three truckmen and two lieutenants received the awards, all of them for daring rescues.

BOB GREENOCK.

Night Club Fire Extinguished With Bean Fog Fire Fighter

Cover Picture

The illustration shown on the front cover of this issue shows a U. S. Coast Guard fireboat in operation. These boats, of which the Coast Guard has many, are usually equipped with eight 500-gallon pumps driven each by a gasoline engine, giving a total capacity of 4,000 gallons per minute at 120 pounds pump pressure. This particular photograph was supplied through courtesy of the U. S. Coast Guard, Washington, D. C.

Chief Frank Stetson Dies

Frank Loring Stetson, Chief of the Fire Department of Seattle, Wash., from 1911 to 1920, died on July 24, at his home in that city. He was ninety years old.

Mr. Stetson, a past president of the Minnesota State Fire Association, had been Chief of the Minneapolis Fire Department before going to Seattle. He had also organized a fire fighting company in Alaska. He was a member of the F. & A. M. Darius Commandery No. 7, Minneapolis, Minn.

A son, a daughter, a grandson, and two granddaughters survive.

W. G. WINCHESTER

Nealon Chief at Utica Hospital

Frank A. Nealon, who retired from the Schenectady Fire Department after thirty-two years' service, has been appointed fire chief at the Rhodes General Hospital in Utica, New York, a government institution. He had been on leave of absence from the Schenectady Fire Department two years prior to his retirement, serving during that time as one of two co-chairmen of a statewide committee on fire defense.

Chief Nealon is president of the New York State Association of Firefighters and served several times as president of the Schenectady Permanent Firemen's Association, resigning that office when he took the State position in 1941.

ARTHUR W. CHADWICK.

W. T. Craswell Rounds Out Thirty-One Years as Chief

Chief William T. Craswell of the Valley City, N. D., Volunteer Fire Department, was recently honored by the Rotary Club of his city for his outstanding record in fire protection and fire prevention during the thirty-one years he has headed the fire department.

Chief Craswell was instrumental in equipping the fire department with modern apparatus and also in seeing that the city got an adequate supply of water for fire protection.

He provided a system of inspection of buildings for fire hazards and in 1923 won a reclassification from 5-7 to 5-6, resulting in a reduction in insurance rates.

In 1928 he had hose threads standardized so that neighboring cities could interchange hose in event of bad fires.

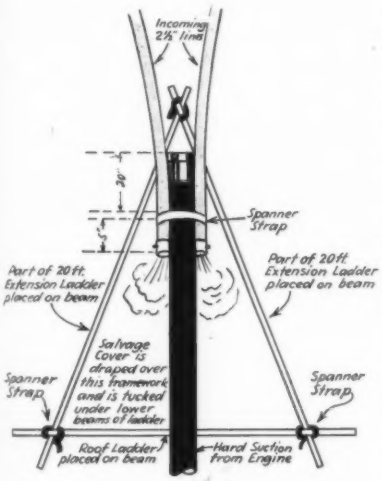
From 1931 through 1942 Valley City has been a consistent first place winner for North Dakota in the Fire Waste Contest.

RELAYING WATER BY USING EMERGENCY CATCH-ALL BASIN

Novel Arrangement Simplifies Problems in Relaying and Increases Effectiveness

By Harry J. Callahan
Chief, Fire Department Training, Detroit, Mich.

THE manner in which Detroit, Mich., is prepared to successfully relay water in emergencies is with the use of the


Incoming 2½" line
Spanner Strap
Part of 20ft. Extension Ladder placed on beam
Part of 20ft Extension Ladder placed on beam
Salvage Cover is draped over this framework and is tucked under lower beams of ladder
Spanner Strap
Spanner Strap
Roof Ladder placed on beam
Hard Suction from Engine

Emergency Catch-All Basin

emergency catch-all basin. The distance that water can be relayed is limited only by the number of engines and hose available. For years the problem of an effective water relay has caused much concern to fire departments throughout the United States, and a tried and practical solution has been worked out for Detroit.

During times as we are experiencing in the present military emergency, it is a well known fact that cities are subject to enemy bombing attacks and acts of sabotage which presents the problem of relaying water over lengthy distances if key water mains of any water zone were destroyed. In addition to this, there always remains the possibility of an area being deprived of water in the event that key water mains were ruptured through natural causes. The water supply of most cities is divided into a network of zones and the rupturing of certain mains would cut off the water supply of a large area which in some instances would cover several square miles.

The effectiveness of relaying water through connected engines and hose is necessarily limited and decreases with the length of line and number of engines that must be employed. Exhaustive tests made throughout the country have shown that under ordinary conditions a relay in which it is necessary to use more than two connected engines with approximately 2,000 feet of connected hose is not of much practical value.

Besides excessive friction losses there are other disadvantages in relaying water over long distances through connected engines and hose. In the event the nozzle was shut off or the engine shut down due to the failure of working in unison or the delay in getting signals, the hose pressure would suddenly be increased several hundred pounds so that even new hose could not withstand the pressure. Conditions as these defeat the purpose of relaying over lengthy distances through connected engines and hose.

The Detroit plan for relaying water during emergencies is for the first arriving engine at the fire to locate the nearest source of water supply outside of the affected water zone, and to erect an emergency water catch-all basin approximately 1,000 feet from the supply. The first arriving engine can immediately stretch the 1,000 feet of 2½-inch line, which is ordinarily carried on the apparatus, from the erected water catch-all basin to the nearest water supply.

On the arrival of the reserve hose wagons, each of which is equipped with 4,000 fet of 2½-inch reserve line, from their strategically located stations, a second line can be stretched leading into the catch-all basin. A second pumper, upon using a hard suction, can draft water from the catch-all basin to a second basin erected approximately 1,000 feet from the first basin. This practice is repeated for whatever distance is desired until finally the engine within close proximity of the fire drafts water from the last erected catch-all basin through two 2½-inch lines or four 1½-inch lines to the fire.

In communities where there is a limited supply of hose, the distance between the basins is necessarily shortened to comply with the amount of hose available and the number of lines leading into the basin.

Construction of Basin

The emergency catch-all basin is constructed with a 20 foot extension ladder that can be dismembered, a roof ladder, three leather spanner belts and a salvage cover or tarpaulin. All of this equipment is usually carried on a standard pumper. After the ladders are assembled in the form of a triangle, each angle is fastened with a spanner belt, strap or rope. The tarpaulin or salvage cover is then placed over the framework, thus forming a basin. The time required to erect the basin is but two minutes.

Incoming lines which are delivering water from the pumper to the catch-all basin are strapped approximately 18 to 24 inches from the end of the stiff suction and 4 to 6 inches from their own open butts. The lines are placed on each side of the suction. The open end of suction will consequently be in dormant water on side opposite from where the water is received in catch-all basin, due to the fact that the incoming lines and stiff suction are in opposite directions. This method of strapping will securely hold the lines and suction in the basin, and will also eliminate the forming of air bubbles.

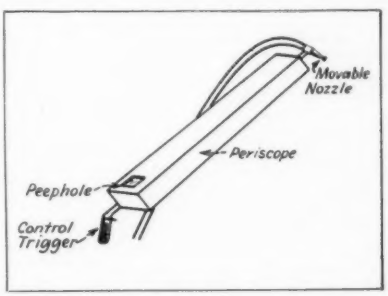
The basin should be kept well filled and the suction end fully submerged in water. This will allow the pumper to pump water efficiently for an indefinite period and not only will supply at least 550 GPM to give two good streams on fire but will also provide a sufficient water overflow that can be used to refill fire extinguishers. The catch-all basin, 8 x 8 x 7 x 14 inches deep holds approximately 350 gallons.

This simple manner of relaying water eliminates the main problem of a breakdown caused by the lack of coordinated operation of pumps, as each catch-all basin is separate and every engine drafting water from a basin would work wholly independent.

Worn reserve hose can be used in relaying with the catch-all basin as but a very low pressure is required to keep the catch-all filled due to the open butts of the line leading into the basin.

New Invention Fights Explosive Bombs

A novel invention has been perfected by a Dundee (Scotland) fire buff which may enable firefighters to fight the newest type of explosive bombs with safety. The inventor is D. C. Dall of the "Dundee Courier," where he works as a



Periscope Pump

press room overseer. The fact that explosives have been added in the newer type incendiary makes the previous method of extinguishing a dangerous one. To overcome that danger, Mr. Dall devised the periscope pump. He produced what appears to be a possible answer to this latest danger. He incorporated in the normal stirrup pump used to extinguish incendiaries a periscope arrangement. The nozzle of the spray is movable at the operational end and can be directed at will, the control being in the trigged finger at the other end of the periscope.

A fireman, suspicious of a bomb, can take this equipment to the protection of a wall, over which he sights the bomb while keeping himself behind wall protection. After sighting he directs the nozzle and sprays the bomb. The device can be used over a wall, around a solid protection, or poked through a skylight to spray a bomb which is burning on a roof.

R. WALKER

WITH OUR READERS

N. F. P. A. Denies Favoring Federal Control of Fire Service

Mr. Fred Shepperd, Editor,
FIRE ENGINEERING

Dear Fred: You are in error and have done a serious injustice in the editorial statement in your June, 1943, issue. In this you say I advocate federalization of the American fire service.

I not only do not advocate federalization but am violently opposed to it. Furthermore, the National Fire Protection Association is not advocating federalization of the fire service and in fact has not even considered any recommendations that the present set-up in this country should be changed. In view of this I expect you to retract the statement, giving the retraction at least as much prominence as your statement.

The report I made at Chicago will be printed in full in the Proceedings. Please note that I was telling why England has nationalized its fire service in order to deal with air raids. English experience is that you have to have large fire departments to deal with air raid fires. Small fire departments cannot do it even with "mutual aid" arrangements.

In this war we will not be likely to have raids like England's to deal with. If we did, we would need to group our fire companies into departments so that forces of the order of 500 pumps, more or less, would be available to operate under one command.

Your editorial unfairly slanders English fire fighters in saying that they did not hold their posts under heavy attacks. Fire guards and firemen, both auxiliary and regular, held their posts bravely during the raids. Those who failed were the local authorities, including fire officials, who had never handled a big fire force in their lives. Firemen fought at fires long hours without direction and without relief, food or rest. The system of small independent fire brigades could not provide enough competent officers and simply did not have the needed administrative facilities.

Cordially yours,
HORATIO BOND, Chief Engineer
National Fire Protection Association
Boston, Mass.

Editor's Comment

Apparently, Horatio, you did not note the heading of the editorial against which you protest, for therein we *ask if your association is advocating federal control* of the fire service rather than asserting that it is so doing.

We are very pleased to have your assurance that you and your great organization are opposed to this un-American scheme, for such opposition will aid materially in preventing its future adoption.

You make no mention, however, of state control of fire departments which we discussed in the editorial. Such a set-up is equally as obnoxious to the fire service as federal control. It is the same centralization of control over fire departments except the unit is smaller. It would open the door to the Huey Long method of state licensing of firemen, where licenses to work were renewed every six months—if the firemen had "played ball" with the state administration in the intervening period.

In your talk at the recent Chicago meeting of the National Fire Protection Association you advocated state control. Furthermore, you have evidently favored some form of centralized control for the past decade. This is indicated by the report you made recommending the consolidation of the fire departments of sixteen cities in Massachusetts into one large fire department.

Saving in "Salaries of Chiefs and Drivers" of $100,000 a Year

Your plan would have meant the elimination of fifty fire companies, and the saving in "salaries of chiefs and drivers" of $100,000 a year. A bill based on this report, to legalize such a consolidation, was submitted to the state legislature in 1933 but was killed as a result of some very fine educational work done by alert members of the Massachusetts Fire Chiefs' Club.

While only a part of the state was involved in this plan, it meant centralized control of fire departments of a group of cities. State control is but a small step from this starting point.

Centralized control of the fire service may work in England, Horatio, but it is neither needed nor wanted here.

With regard to our "slandering" the British fire service, again you have read into the editorial statements that do not appear therein. We make no mention whatsoever of "regular firemen," and yet you infer they were "slandered."

As far as auxiliaries are concerned, we need only to quote from an editorial appearing in the November, 1940, issue of FIRE ENGINEERING to express our present views of the work of these heroic men:

"The Auxiliary Fire Service in Great Britain is performing a heroic service in protecting the large cities of that nation against destruction from the skies. If there had been any doubt about the ability of these 'green' firemen to battle flames of conflagration proportions and to take punishment, such doubt has been erased by their splendid work under fire.

"Unlike the regular firemen, the auxiliaries suffered severely during their first ten weeks in action from the lack of food and proper clothing. No food rations had been provided for the auxiliaries engaged in operations at prolonged fires, and many had to go foodless for an entire day; even drinking water was scarce when fire fighting operations were being performed under aerial bombardment.

"Each auxiliary firemen is provided with but one uniform. No change is therefore available. And working in wet clothing is all too common.

"Despite these handicaps, the Auxiliary Fire Service is truly proving a first line of defense against enemy attacks, and is bringing glory without end to the fire service.

"Credit for the accomplishments of the auxiliaries must also be given to the regular fire force, which trained them, and which is doing yeoman service, as was expected."

So as things stand, Horatio, I don't see where we have done anybody an injustice.

New Method of Rolling Hose

To the Editor:

May I submit my new method of coiling hose to prevent it from kinking?

It is as follows: Place hose in manner indicated in Figure 1. Now fold all number 2 loops over number 1 loops as in Figure 2.

FIGURE No. 1

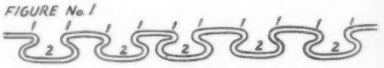


FIGURE No. 2

FIGURE No. 3

FIGURE No. 4

Now gather hose. Place K on J; K, J on I, etc. When finished, hose will appear as an ordinary coil. Now run your hose out and it will be kinkless.

You can accomplish this same coil in one movement. Start coil as usual (Figure 3). When making your next loop, just give half a turn and place on the stack. Place number two over one (Figure 4). Repeat this until all the hose is on the stack. Every other loop is a half turn.

It is very simple to perform this operation. You will notice that there is no kinking while you are coiling the hose. You can also use this method on rope, long drop cords such as are used for light plants, etc.

Very truly yours,
LOUIS H. HALLER,
Burlington, Ia., Fire Department

A Method of Overcoming Adapter Problem

To the Editor:

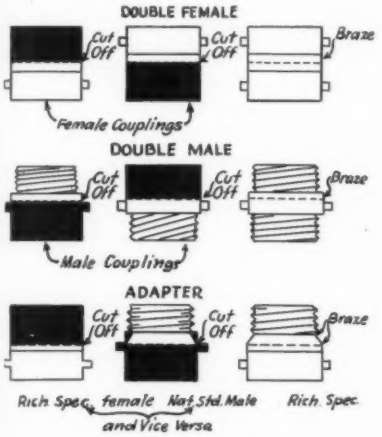
Because it is the plan of the Office of Civilian Defense to furnish adapters for use with the fire fighting equipment loaned to municipalities, the War Production Board will not grant a preference rating for the purchase of such equipment or to have it cast, the reason being that it will be a duplication of equipment as soon as adapters are provided by the OCD.

I also have information that adapters will not be furnished by the OCD until after the delivery of all other fire fighting equipment has been completed. I presume this to mean, to all municipalities in strategic areas to which tentative allocations have been made. I believe from the foregoing that it will be quite some time before this equipment is available, possibly six months or longer.

We have several 500 g. p. m. OCD pumpers and thousands of feet of OCD hose on hand which is of little or no value to the City of Richmond without adapters, as we do not have National Standard thread.

How we propose to overcome this difficulty by making at least one set of adapters for each OCD pumper, enabling connections to be made to our hydrants, nozzles, deluge sets, pumpers, ladder pipes, wagon pipes, water tower, building standpipes, sprinkler systems and all other fire fighting equipment of the regular department, is shown in the accompanying sketches.

We have secured several complete National Standard couplings (used) and



by brazing the male of one to our female, a very good adapter results. Likewise by brazing the female National Standard coupling to our male, we have a set. Double male and double female connections can be made just as easily.

Possibly other cities are having the same difficulties and our experiences might be of some help to them.

Very truly yours,
CARRINGTON R. CORNICK, Captain,
Richmond, Va., Fire Department,
Chief Training Officer, Auxiliary
Fire Department.

Fire Protection of Defense Industry

To the Editor:

The plants of the Hudson Motor Car Company are now engaged in a variety of important war work. We now employ approximately 12,000 men and women, and in the near future that number may be greatly enlarged.

For many years we have maintained an efficient fire department in these plants, with a chief, an assistant chief and fire marshals on each shift. In addition, all plant protection patrolmen are trained to fight fires. This regular force is now supplemented by an auxiliary fire brigade at each plant. A force of 625 auxiliaries have already been trained.

These men are all given training in fire fighting and in the handling of hose and extinguishers. Other special training, consisting of ten-hour instruction courses and one hour a month classes, have been instituted. This auxiliary fire force is primarily for emergency duty in the event of air raids, and the men are not expected to combat ordinary plant fires. However, if trained auxiliary firemen are present when a fire occurs, they are expected to help.

Special badges have been issued to these volunteers, showing the squad to which they belong, and the rank of the individual. The brigade is set up with captains and lieutenants who are in charge of extinguisher squads and rescue squads. To the rescue squad has been added a women's auxiliary, who act as nurses. Training of the rescue squad has included a complete course in first aid. All auxiliary firemen receive three hours of gas instruction.

An "alert air raid and fire drill" is now held every two weeks. Only brigade members are concerned with this drill. All other employees continue their work throughout the drill. In this way war production hours are not lost.

Very truly yours,
B. HAGEN, Chief Fire Marshal
Hudson Motor Car Company

Automatic Sounding of Fire Alarms by Dial Telephone System

To the Editor:

Many communities having a fire alarm system have no permanent man at their fire stations. And more often than not, there is no definite twenty-four hour place to be reached by telephone to notify the fire department of a fire. Where a community has a manually operated telephone exchange, arrangements are often made for notification of telephoned fire calls by installing a fire alarm box, or a transmitter, in the telephone exchange, for operation by the telephone operator receiving the fire call.

With the installation of the dial telephone system, and no operators, such installations are "out."

It would be possible to install a master type box in the fire alarm system. The tripping mechanism of the box can be actuated by proper connection to one of the dial exchange lines. This line can be given a totally different number to any other lines of that exchange to obviate error.

This line is to be listed "For Reporting a Fire. Remain on Line Until Answered." This line could have a "receiving" telephone, without dial numbers, thereby making it possible to receive a message, but making it impossible to originate a call from that telephone and so possibly tripping the master box.

Another telephone should be installed for regular business of the fire department.

With the continuation of "manless" fire stations, and the increased installation of dial systems to replace "operator exchanges," I believe the above matter should be given special attention at the International Association meeting this year, and referred to a special committee to investigate the situation in all its phases, which would include the mechanical-electro phase and the very necessary cooperation of the various telephone and fire alarm equipment companies. Dead ends have been run into with these companies, primarily because the telephone companies do not want to sell this type of service. Claiming for one thing that they do not want to assume the liability of failure on their part of the system.

This is all nonsense. They do not assume it where alarm transmission equipment is installed in an operator exchange, for they take a written release before such installation. Such a release would be equally permissible in connection with a dial installation.

The aforegoing applies not only to building fires, but also to forest fires. And the satisfactory solving of this matter is not only vital to some communities at present, but it is going to be so in the future to others.

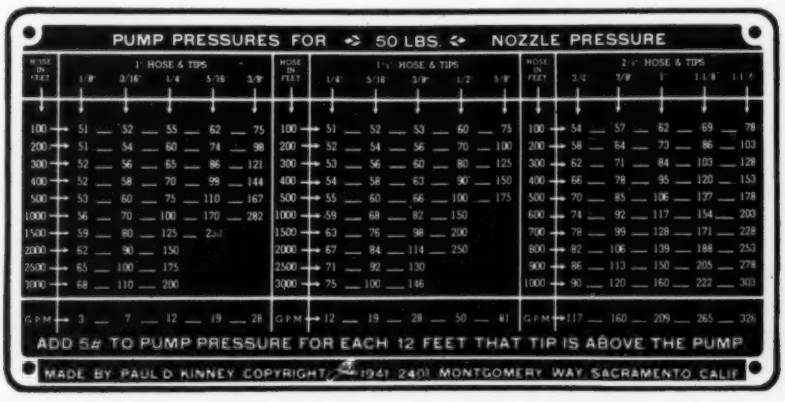
Sincerely,
WILLIAM B. ELY
Auxiliary Fire Chief

Pressure Chart

To the Editor:

Knowing that you are interested in passing on to the fire service helpful data on methods and appliances that tend to increase the efficiency of all fire departments. I wish to call to your attention, if you have not already had the information, a pressure chart that our department, the California State Division of Forestry, has installed on over 400 pieces of equipment and which we feel has been of great benefit in prolonging the life of our pumping equipment as well as being the means of delivering a more efficient fire stream with added conservation of our limited water supply, especially when pumping from booster tanks.

We carry on a continual training, program covering all phases of fire fighting, such as structural, oil and forest fires. In these courses we cover friction losses, in actual and quick mental formulas.


PUMP PRESSURES FOR → 50 LBS. ← NOZZLE PRESSURE

HOSE IN FEET	1" HOSE & TIPS 1/8"	3/16"	1/4"	5/16"	3/8"	HOSE IN FEET	1 1/4" HOSE & TIPS 1/4"	5/16"	3/8"	1/2"	5/8"	HOSE IN FEET	2 1/2" HOSE & TIPS 3/4"	7/8"	1"	1 1/8"	1 1/4"
100	51	52	55	62	75	100	51	52	53	60	75	100	54	57	62	69	78
200	51	54	60	74	98	200	52	54	56	70	100	200	58	64	73	86	103
300	52	56	65	86	121	300	53	56	60	80	125	300	62	71	84	103	128
400	52	58	70	99	144	400	54	58	63	90	150	400	66	78	95	120	153
500	53	60	75	110	167	500	55	60	66	100	175	500	70	85	106	137	178
1000	56	70	100	170	282	1000	59	68	82	150		600	74	92	117	154	203
1500	59	80	125	240		1500	63	76	98	200		700	78	99	128	171	228
2000	62	90	150			2000	67	84	114	250		800	82	106	139	188	253
2500	65	100	175			2500	71	92	130			900	86	113	150	205	278
3000	68	110	200			3000	75	100	146			1000	90	120	160	222	303
GPM	3	7	12	19	28	GPM	12	19	28	50	81	GPM	117	160	209	265	326

ADD 5# TO PUMP PRESSURE FOR EACH 12 FEET THAT TIP IS ABOVE THE PUMP

MADE BY PAUL D KINNEY COPYRIGHT 1941 2401 MONTGOMERY WAY SACRAMENTO CALIF

Pump Pressure Chart Used by California Division of Forestry

We have found, especially in the past twelve to eighteen months, that due to the loss of many of our old employees and the turnover of the newer ones, the average man does not have the time to thoroughly absorb or the practical experience to apply this phase of our training properly. With this metal pressure chart bolted to the operating panel, the engineer can see at a glance the necessary pump pressure needed to maintain 50 pounds pressure at the nozzle through the various lays of hose. This pressure may be increased or decreased by signals from the foreman to the operator.

These charts are of metal and the one that we use has divisions, one for 1-inch hose, 100 feet to 3,000 with tips from ⅛-inch to ⅜-inch; 1½-inch hose from 100 to 3,000 with from ¼-inch to ⅝-inch tips; and 2½-inch hose, 100 feet to 1,000 feet with tips ¾-inch to 1¼-inch. Each column shows pump pressure required to maintain 50 pounds nozzle pressure and shows the gallons per minute delivered at that pressure.

Mr. Paul Kinney, an engineer in the Sacramento, Cal., Fire Department, has been supplying these charts to us.

Yours very truly,

L. C. GORDON, Equipment Engineer, State Division of Forestry.

Water Cannon Throws Ton Every Thirteen Seconds

A new "fire killer" which packs as much punch as a demolition bomb has been developed by the Kearns Fire Department to prevent any serious conflagrations at this post.

Under the direction of Chief Harold W. Carter, a water gun capable of throwing a ton of water every thirteen seconds was mounted on a pickup truck. The function of this device is threefold. Its high pressure demolishes a burning structure, the stream of water extinguishes the blaze, and its spray protects adjoining buildings.

The big water gun, which is fed by the standard type pumpers of the fire department, originally was manufactured for use from the ground. Chief Carter had it mounted on the pickup truck, with connecting hoses installed in the truck bed. As a result of this change, the device can be placed in operation in 1¼ minutes instead of more than 12 minutes normally required.

Another feature of the truck mounting is the fact that the nozzle of the gun can be turned to a low angle, which was impossible when it was used from the ground. The lower angle makes it possible to hit a building with enough force to smash the heart of a blaze.

"Kearns Post Review," AAFTTC-BTC (5), Kearns, Utah

Woman Drives Port Washington Ambulance

The Port Washington, N. Y., Fire Department was confronted with the problem of shortage of manpower to operate the free ambulance service it has been rendering to the people of the town. They finally decided to get the help of some of the women in the local defense council who were interested in this kind of work. The women had to qualify in first aid work and in safe driving.

Port Washington's Ambulance

It was decided to give Mrs. Lee Warrender an opportunity to prove herself capable of this kind of work. After a month's trial, she has proven beyond doubt that she can replace the firemen who have gone to the front.

At the May meeting of the fire department, Mrs. Warrender was made a member and given a gold badge. She is on duty twenty-four hours a day as a volunteer fireman and the department is proud of her work.

WILLIAM F. HEWETT.

High School Swept by Fire

Unaware that the building was doomed by fire, 150 students filed out of the Colton High School in Northern New York a few minutes before a $100,000 blaze swept the structure.

Discovered by a janitor, the flames apparently started from a short circuit in the boiler room. Principal M. H. Corbett sounded the school fire alarm and the students left the building, not knowing until they reached the outside it was not a routine fire drill.

Spreading rapidly between the floors and partitions, the fire was out of control when Colton volunteers arrived on the scene. Aid was requested of the Potsdam fire department and the two departments laid hose from the Racket River a quarter of a mile away, placing pumpers in operation there. Dense smoke hampered operations and a high wind, sweeping across the knoll on which the building was located, left the structure a seething mass of flames within a matter of minutes.

All classroom furniture, laboratory equipment, the school library and numerous instruments were destroyed in the fire. The building was erected in 1882 with an addition in 1926.

Burning embers were swept over the village but a heavy precipitation lessened the danger of other fires. It was the second Northern New York school to burn this year, fire having destroyed the Brasher-Stockholm high school last January with a similar loss.

SANFORD D. DEWEY

Double Fire

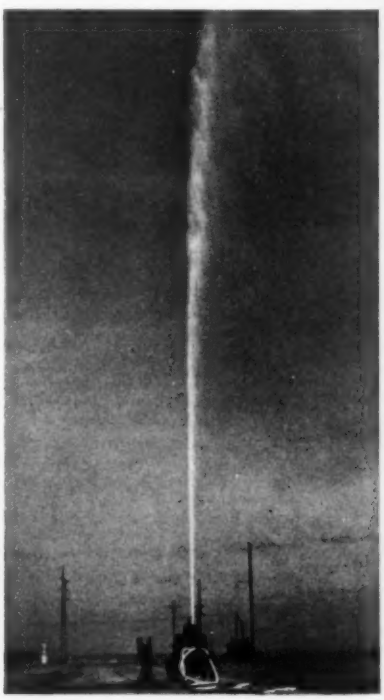
Police and fire department officials of Berkeley, Calif., recently were called upon to investigate a $50,000 mystery fire which destroyed a restaurant and four offices above it two hours after a smaller fire had been extinguished in the same place. Two firemen were injured fighting the second blaze.

The first alarm at 1:19 a.m. was for a grease fire in the kitchen of the Cat 'n' Fiddle restaurant, near the University of California campus. Damage at that time was estimated at $250.

At 3:48 a.m. firemen were called again. Flames in this instance had gained so much headway that a second alarm was sounded at once. The flames swept through a secretarial school, dentist's office, a hosiery company and two other offices, as well as damaging four adjoining stores.

Official Photo Army Air Forces Technical Training Command

Pumper Connected to Water Gun



Official Photo Air Forces Technical Training Command

Water Gun in Operation

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Tentative Program of I. A. F. C. Conference

TUESDAY, AUGUST 31, 1943

Registration 8 A.M. to 9:45 A.M.

Conference called to order at 10 A.M. at Palmer House, Chicago, Illinois

Invocation
Singing of National Anthem
Address of Welcome
Response to Address of Welcome
President's Message
Announcements
Memorial Service
Adjournment

Afternoon (2:00 P.M.) at Palmer House
Roll Call
Adoption of Minutes of Preceding Meeting
Appointment of Committees
Report of Secretary-Treasurer
Report of Board of Auditors
Reading of Communications
Reports of Sectional Organizations
Reports of Standing Committees

Topic No. 1: "The Effective Reach of Powerful Streams", by Colonel Clarence Goldsmith, Chief Consultant, Fire Defense Section, Office of Civilian Defense, and Assistant Chief Engineer, National Board of Fire Underwriters.

Topic No. 2: "Handling of Electrical Fires", by Chief Walter W. Stephen, Fire Department, Monsanto Chemical Company, Anniston, Alabama.

Topic No. 3: "Scouting and the Menace of Fire", by Captain Fred C. Mills, Director of Health and Safety, Boy Scouts of America, New York.

Topic No. 4: "Cutting Corners to Meet War Needs for Critical Materials", by Alvah Small, President, Underwriters' Laboratories, Chicago, Illinois.

WEDNESDAY, SEPTEMBER 1, 1943

Morning (9:00 A.M.)

Topic No. 5: "Fire Department Personnel Training Systems, Past and Present", by Sherwood Brockwell, Chief of the North Carolina Volunteer Fire Department.

Topic No. 6: "Civilian Defense in Canada", by W. J. Scott, K. C., Fire Marshal, Province of Ontario, Canada.

Topic No. 7: "The Relationship Between the O.C.D. and the Fire Service of the United States", by F. S. Gay, Technical Assistant Chief, Protection Branch, OC.D., Washington, D. C.

Topic No. 8: "Mutual Aid — Now and Tomorrow", by Roi B. Woolley, Chief, Coordination Unit, Fire Defense Section, Protection Branch, Office of Civilian Defense, Washington, D. C.

Afternoon (2:00 P.M.)

Report of Exhibit Committee.
Introduction of Exhibitors

Topic No. 9: "Fire Apparatus and Equipment Priorities", by George A. Cumming, Chief, Fire Defense Section, Government Bureau, War Production Board, Washington, D. C.

Topic No. 10: "Protection of Defense Industries from the Municipal Fire Department Viewpoint", by Peter Steinkellner, Chief of the Fire Department, Milwaukee, Wisconsin.

THURSDAY, SEPTEMBER 2, 1943

Morning (9:00 A.M.)

(This will be a Closed Session. Only those having registration badges will be admitted.)

Topic No. 11: "Fire Fighting in the Manufacture of Ammunition", by A. L. Headlough, Chief, Fire Protection, Trojan Powder Company, Plum Brook Ordnance Works, Sandusky, Ohio.

Topic No. 12: "Mutual Problems of Fire Chiefs and Law Enforcement Agencies in Guarding the Home Front", by S. J. Drayton, Special Agent in Charge, Federal Bureau of Investigation, United States Department of Justice, Chicago, Illinois.

Topic No. 13: "Training Coast Guard Fire Fighters", by Lloyd Layman, Lieutenant Commander, United States Coast Guard, Fort McHenry Training Station, Baltimore, Maryland.

Topic No. 14: "The Bureau of Yards and Docks and Its Fire Protection Program for Naval Shore Establishments", by Harold K. Hughes, Lieutenant Commander, United States Naval Reserve, Navy Department, Bureau of Yards and Docks, Washington, D. C.

Topic No. 15: "Training Our Naval Forces in Fire Fighting Aboard Battleships", by Harold J. Burke, Lieutenant Commander, Navy Department, Bureau of Ships, Washington, D. C.

Topic No. 16: "The Internal Security Program of the Army", by W. E. Guthner, Brigadier General G. S. C., Director, Internal Security Division, Service Command, ASF, Chicago, Illinois.

Afternoon (2:00 P.M.)

Visit to the Underwriters' Laboratories, Incorporated.

FRIDAY, SEPTEMBER 3, 1943

Morning (9:00 A.M.)

Unfinished Business
Report of Secretary on Attendance
New Business
Selection of next year's Convention City
Election and Installation of Officers
Final Adjournment

FIGHT YOUR FIRES *with*

600 lb. FOG AT THE NOZZLE

BEAN - FMC
ORIGINAL
FOG FIRE FIGHTERS

FOOD MACHINERY CORPORATION

JOHN BEAN MFG. CO. DIVISION
Lansing, Michigan

BEAN-CUTLER DIVISION
San Jose, California

NEVER CONFUSE BEAN-FMC HIGH PRESSURE 600 LBS. *AT THE NOZZLE* . . WITH OTHER SO CALLED HIGH PRESSURES OF 150 TO 250 LBS. *AT THE PUMP*

. . . YOU NEED HIGH PRESSURE

You can extinguish 95 to 98% of your fires with 600 pound nozzle pressure and with little or no water damage.

High pressure makes a valuable and modernizing addition to your present equipment and will give greater protection plus a marked reduction in fire losses.

High pressure is the greatest contribution ever made to fire fighting. It will become a regular part of fire fighting technique.

600 LBS. NOZZLE PRESSURE - 10 TIMES MORE EFFECTIVE

High pressure atomization (600 pounds at nozzle, 750 to 800 pounds at the pump) is 10 to 35 times as efficient as low pressure. The water is broken up so fine that one gallon of high pressure water will absorb 10 to 35 times as much heat as the same amount of water at usual low pressures. While doing this enormous amount of cooling, it also has a tremendous smothering effect. The velocity at this pressure also has a tendency to blow the fire out, and the frequency of replacement of the used-up fog is important in cooling, smothering and preventing re-ignition.

MULTIPLY BY TEN

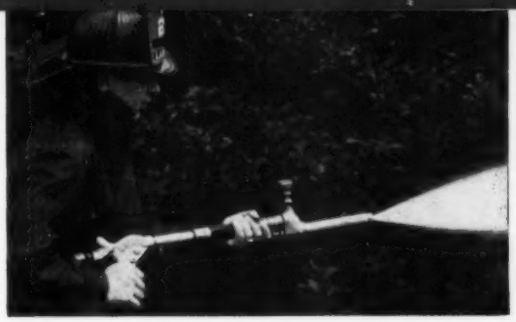
Take a 400 gallon supply of water on a fire truck. Multiply this by the conservative figure of 10 times greater efficiency and you have the fire quenching ability of 4,000 gallons of low pressure water.

Or take a 60 G.P.M. high pressure pump and multiply the 60 by the 10 times increased efficiency, and you have the fire quenching ability of a 600 gallon per minute low pressure pump.

SPEED

You carry your water right to the fire and immediately upon arrival, you start to work on the fire. When used in municipalities, you extinguish the fire in many cases before the 2½" line is ready. For rural fires the same condition is true, plus the fact that you have at least a 10 to 1 better chance of putting out the fires, as no water or insufficient water would be available for low pressure pumper type fire fighting.

BEAN-FMC UNIVERSAL FOG GUN



When you get to a fire, you cannot waste time changing guns. The Bean-F.M.C. Fog Fire Fighter Gun is universal for all types of fires. Above is shown the fireman holding the gun, with left hand on adjusting barrel for changing it from straight stream down to any degree of fog needed for any fire.

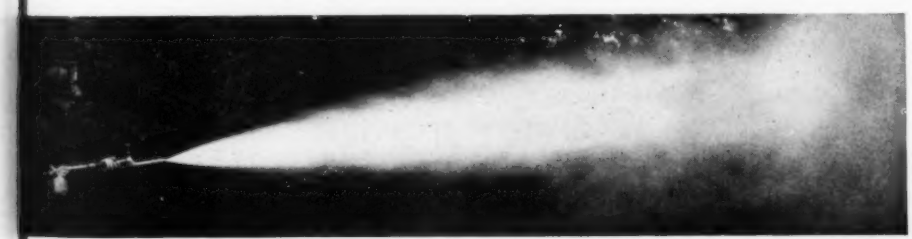
It is a one-man job to fight fire with this gun. With pressure on, it practically carries

itself and can be poked into cellars, attics or holes in partitions. It is fast in fighting fires, when you cannot get inside, simply push it through an opening and turn it on. It is trigger controlled with a trigger lock for continuous use.

If the fire is intensely hot, use the protecting spray nozzle which insulates the fireman's face from the heat. (Above)

This gun has three distinct types of fog:

1. Straight stream for carrying power, or demolition or penetration effect when needed. (Above)



2. The semi-fog which has considerable carrying power and great fire extinguishing effect. (Above)
3. Close-up fog for closed areas, packs the room full of fine fog particles to give the maximum cooling and smothering effect. (Below)

Regardless of the adjustment of the gun, you always get the finely atomized fog which is possible only from 600 pounds or more *nozzle* pressure.

It's the 600 pound *nozzle* pressure that makes the fog. After which the gun is a convenient means of getting the type of fog you want and putting it where you need it.

The Universal type of High Pressure Fire truck. 300 gallons of water, 2 lengths of hose and 2 fire guns of 30 gallons capacity, each. 60 G.P.M. pump at 600 pounds at NOZZLE pressure. Power take-off drive.

The above unit is especially suited to a combination of city and rural fires. The 2-30 gallon fire guns will handle the usual run of residence, barn, small building, basement fires, as well as grass and forest fires. This model is also used as a crash truck at airports for gasoline fires and for industrial use in large factories.

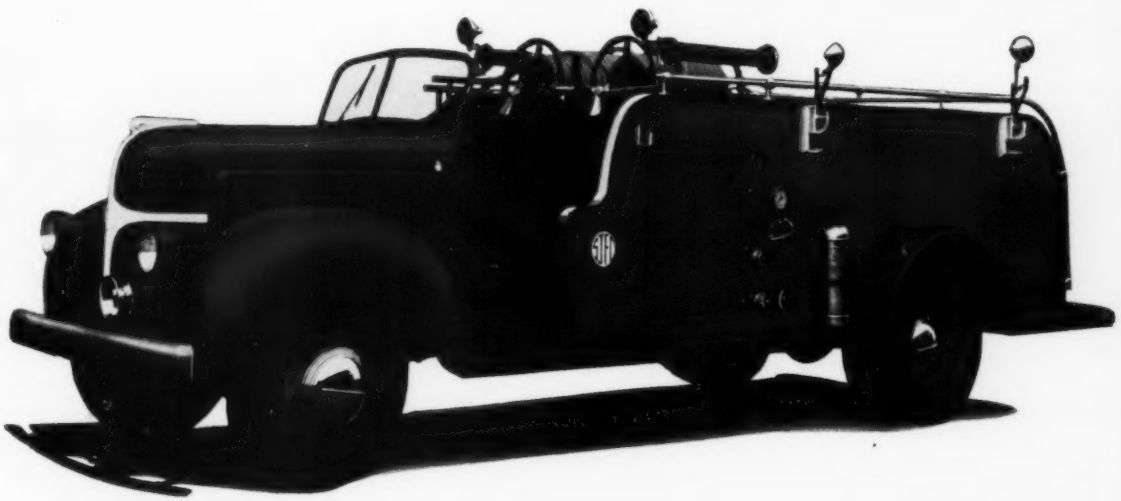
* * * * *

Below is shown a unit especially designed for small town and rural fires, as it carries 400 gallons of water and has attachments for taking water from wells or creeks. It carries complete equipment including ladders, lights, axes, etc. Many units of this type, now in use, have paid for themselves in a short time in cost of buildings saved.

Here again, is the value of 600 pound fog for complete extinguishment where with other systems, you would have had a total loss due to lack of water, or if you had a sufficient supply of water for low pressure quenching, you would have had excessive water damage.

BEAN-FMC STANDARD UNITS

Bean-F.M.C. High Pressure Fog Fire Fighters are available in several models for standard makes of trucks. Operated by a power take-off unit, you are assured of ample power for operating the pump. The High Pressure Pumps used on these trucks are of our own manufacture and have been the outstanding High Pressure Pumps in other fields for many years. The pump is the heart of the fire truck and the built-in ruggedness of these pumps is positive assurance of "Pressure When You Need It." These pumps are actually built for these high pressures and are not to be compared with low pressure pumps of 100 to 250 pounds pressure.



Above is shown a complete standard power take-off drive and 60 G.P.M. unit, 600 pound nozzle pressure, 3 cylinder, horizontal, plunger type pump. (Can also be furnished with cab.) It carries 2-30 G.P.M. Fog Fire Fighter Guns. It is completely equipped for both municipal and rural fire fighting. Has carrying space for 2½" hose. Accessories are optional.

HIGH AND LOW PRESSURE COMPARISON

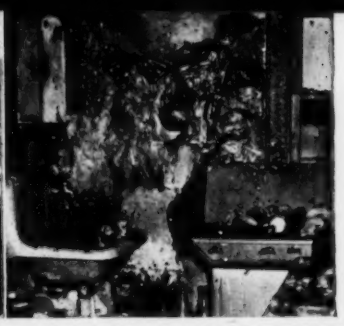
Here is a comparison of high and low pressure water on the same fire. "On a certain rural fire a low pressure booster pump unit with 250 gallons of water arrived at the fire several minutes ahead of the high pressure unit with 300 gallons of water from another station located at a greater distance. It was a one-story frame building about 30 x 40, insulated with saw dust and hemlock boards. The entire building was afire and the low pressure booster put 250 gallons of low pressure water on it with no apparent effect. About the time they ran out of water, the high pressure unit arrived and put 2 lines into action, knocked the fire down in 30 seconds and cleaned it up and had water left out of their 300 gallons. The high pressure unit saved 2 buildings adjoining, as well as a garage and the house. See picture of this building on Page 7. This offers an actual comparison on the same fire of both high and low pressure.

KEEPING THE FLAMES AWAY FROM THE CAR WHILE GASOLINE IS BEING EXTINGUISHED.

Fireman starts on fire with straight stream while walking up to it.

The fog is taking effect inside as can be seen by steam pouring out.

Closer up he begi… get quick…



EAN-FMC 600 lb. NOZZLE PRESSURE FOG

xtinquished these fires with a small amount of water.

Most of these fires occurred at night when it was impossible to photograph the fires themselves.

begi ing more fog to quick ction.

The fire is out in less than one minute.

The full fog is used with quick results.

THE FIRE THAT COULDN'T BE PUT OUT . . . BUT WAS!

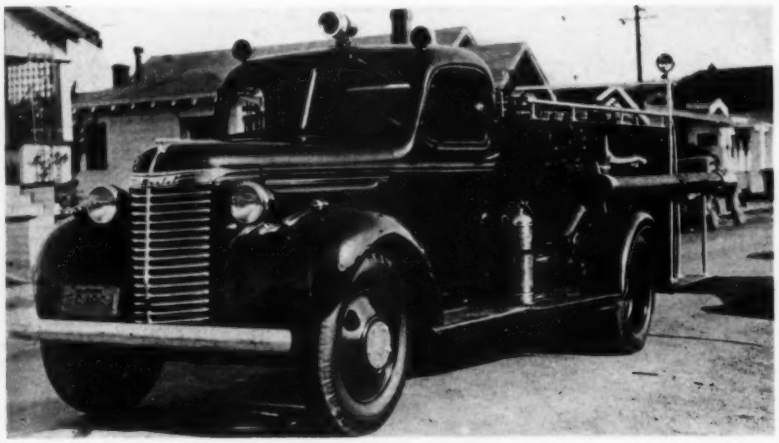
Outside the city limits with no water supply available is this night club. A fire of incendiary origin was discovered in the early morning. No one was in the building. The fire had a terrific start from the basement, up through the center of the building through the roof, when the fire department arrived. Parts of several rooms on each floor were burning. The wooden box-like construction was such that with the start the fire had, no one thought the building could be saved. In fact, experienced firemen predicted it would burn to the ground. Here, again,' is the case of High Pressure with its 10 to 1 efficiency making good use of the 500 gallons in the water tank on the fire truck which made a complete stop in record time. Had it not been for High Pressure, this building would have burned to the ground with an additional loss of several thousands of dollars. The smaller pictures show the extent of the fire, again proving the value of 600 pounds nozzle pressure. About a week later the building was touched off again and had a roaring start and again F.M.C. - BEAN High Pressure Fog saved it with 200 to 300 gallons of water.

ORIGINATED BY

BEAN-FMC

Auxiliary Units Aid Fire Protection of Berkeley

When the Japs struck at Pearl Harbor, the Berkeley, Calif., Fire Department had fifteen pieces of major fire fighting apparatus in service and three pieces in reserve. By 5 p.m. of that fateful Sunday all eighteen pieces, plus a 1,250-gallon-per-minute pumper obtained from the Hall-Scott Motor Company under a lend-lease war duration agreement and six Street Department trucks were in service, manned by on-shift and recalled off-shift personnel. Twenty-five pieces of equipment and 120 men were ready to roll.



Truck Built by Auxiliaries of Berkeley

At 1:00 p.m. on the afternoon of October 27, 1942, the Berkeley Fire Department received the first six of its total allotment of twelve OCD pump units. By 10 p.m. the same day the pumps were mounted in service on the six Street Department trucks.

Recently those trucks were replaced by a fleet of 1½-ton Chevrolet truck and the OCD units and bodies, fabricated at the city shops were mounted on the city-furnished chassis.

Today, eighteen months after Pearl Harbor, Berkeley can put a total of twenty-eight pieces of fire equipment in the field with four more OCD units awaiting delivery of truck chassis so they can be mounted and put into service. Berkeley, to date, has received from the OCD ten skid-mounted pump units, two front mounts, twelve 24-foot extension ladders, twelve 14-foot roof ladders, twenty-four 10-foot lengths of 4-inch suction hose, twelve fire axes, twelve plaster hook-pike poles, 4,800 feet of 2½-inch hose and 2,400 feet of 1½-inch hose.

As Chief William Meinheit puts it, "Berkeley, directly opposite California's Golden Gate, hopes the rest of its OCD equipment allotment gets here before the Japs."

Enthusiasm of Berkeley's auxiliary firemen more than makes up for lack of equipment due to priorities and OCD red tape.

One auxiliary engine crew, regularly assigned and trained by Engine 1, 906 Channing Way, requested permission from Chief Meinheit to build and construct their own OCD unit on the 1½-ton Chevrolet chassis furnished by the city. The chief granted the request and work was started by the auxiliary group in the rear of their assigned company quarters last October 27.

Steel was retrieved from local war plant scrap piles, fenders from automobile junk yards, discarded electrical conduit eventually became rails and handholds, small pieces were welded together to make sheets to fabricate body, running boards and steps.

Discarded bank grill work became hose and tool baskets. Welding outfits were borrowed nightly from cooperative neighborhood plants, as were burning tools, grinders and buffers. Always they were returned the following morning to do their duty for Uncle Sam.

Regular city firemen of Engine 1 gave their help, assistance, advice. The auxiliaries carried on, begged here, reclaimed materials there, made straight the crooked and dented, shaped the conduit and piping into rails and ladder brackets, extended and sleeved OCD pump intake and outlets. They added, with the aid of 4-inch piping another intake so the rig can go to suction from either side, they fitted the tool and equipment compartments with electric lights, painted the whole unit fire department red, mounted the siren and red marker lights supplied by the fire department shops.

Then, less than sixty days from the time the work was begun, before a neighborhood gathering, the unit was officially turned over to the City.

The whole unit is steel, so constructed that the whole body assembly can be lifted as a unit and placed on another chassis if need be.

The unit carries 1,000 feet of 2½-inch hose, 900 feet of 1½-inch, has a 130-gallon water tank connected to the pump for discharge into 1½-inch or 1-inch lines, and facilities for carrying all the equipment of a regular fire fighting unit.

In accepting the unit, Chief Meinheit remarked:

"This unit and the efforts of these men have received favorable comment from many fire chiefs, municipal, OCD and other government officials and demonstrates that all is still well with this good old U. S. A. when a fine group of loyal citizens will do what these men did.

"The city paid $1,050 for the chassis, Uncle Sam loaned us a pump for nothing, industry and friends freely supplied scrap materials but you men who worked so diligently night after night on your own time after working hard all day long producing the necessities of war have given us something that money can't buy. You gave your love and your devotion, your unfaltering loyalty. You gave up time you could have spent with your family, resting, relaxing.

"Now, as the result of your untired efforts, you have assembled this fine fire truck to aid in the protection for us all. It is difficult to adequately express the appreciation of the people of this community, the city government and the fire department."

Auxiliary Fireman Joseph Scaparro, an iron worker in a local plant, was the designer and leaderman on the job. Ably assisting him were auxiliary firemen including Elmer Allen, Vince Scaparro, Denny Scaparro, Stan Arth, Vince Majuri, Frank Scaparro, V. B. Collins, Ed Lazzershi, Larry De Martini, Frank DeCosta, W. Duke Turner, and F. Kirkham, all of them assigned as auxiliaries to Engine 1.

BOB GREENOCK.

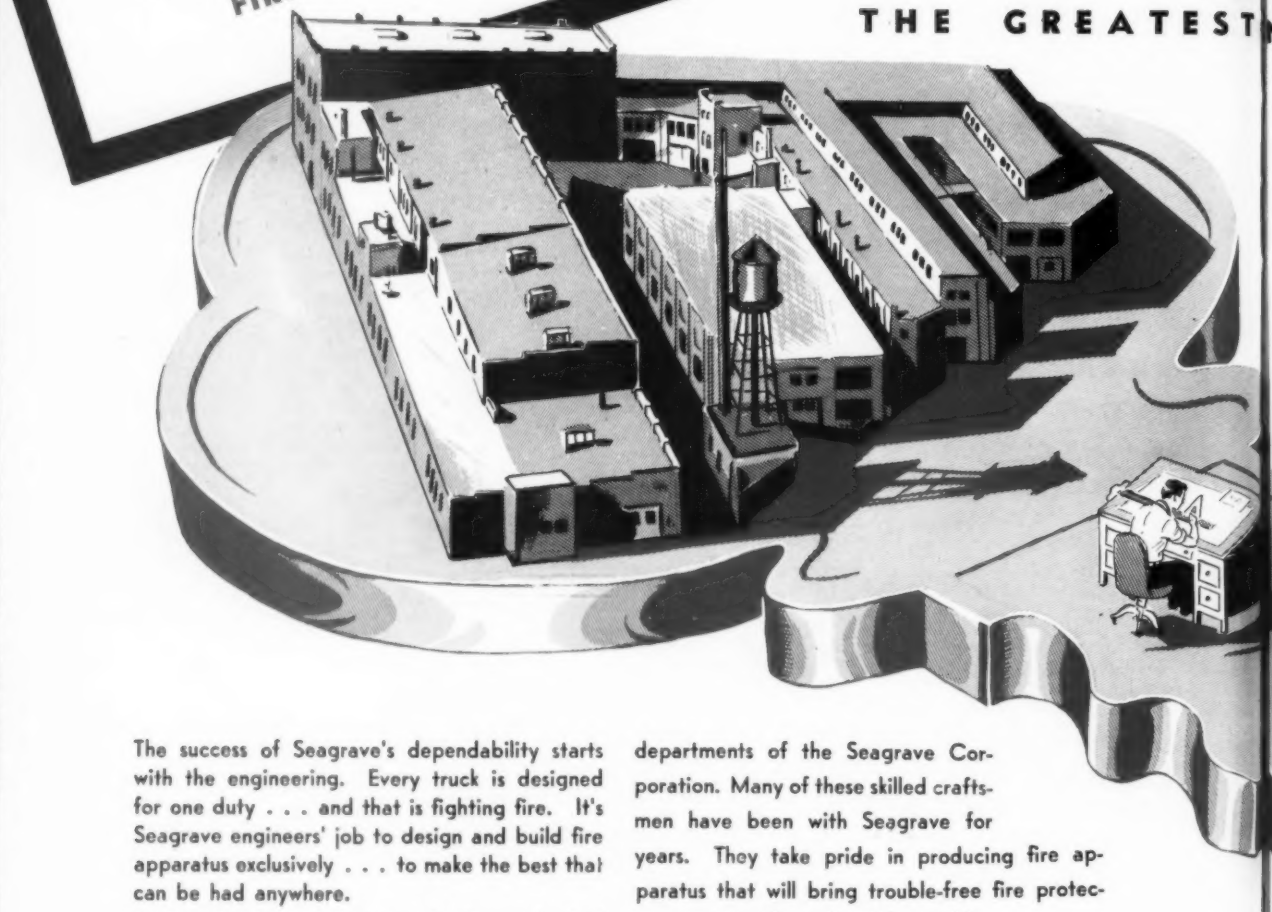
Auxiliaries Present Truck to Berkeley Fire Department

Mr. Chester C. Fisk, City Manager, and Chief William Meinheit are shown accepting auxiliary built OCD unit from auxiliary firemen. Auxiliary fireman Joe Scaparro, designer of the unit, stands in front with gas mask.

THE KEY TO SUCCESSFUL FIRE PROTECTION

SEAG

THE GREATEST NA



The success of Seagrave's dependability starts with the engineering. Every truck is designed for one duty . . . and that is fighting fire. It's Seagrave engineers' job to design and build fire apparatus exclusively . . . to make the best that can be had anywhere.

Engineering ideas take shape in the mechanical departments of the Seagrave Corporation. Many of these skilled craftsmen have been with Seagrave for years. They take pride in producing fire apparatus that will bring trouble-free fire protection to cities throughout the world.

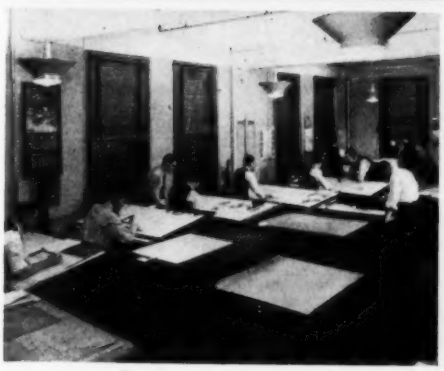
THE SEAGRAVE CORPORATION,

Columbus, Ohio.

Bickle-Seagrave, Ltd., Woodstock, Ont.

AGRAVE

ST NAME IN FIRE APPARATUS



At Columbus, Ohio, is the most modernly equipped plant in America devoted exclusively to the manufacturing of fire apparatus. It is the home of the Seagrave Corporation. Engines, pumps, frames, bodies, ladders and principal parts that go into Seagrave Apparatus are designed and made here. There are no substitutes, no make-shift arrangements when you buy a Seagrave . . . from front to back it's engineered, machined and produced exclusively for fire protection.

Rhode Island Tool Company Ready for Air Raids

When the warden pulls the lever in the air raid alarm box at the Rhode Island Tool Company plant in Providence, things happen. An ambulance, complete with trained nurse and driver, speeds out. A fully equipped fire department responds with hose and two pumpers. Two police forces—one composed of men, the other of women—spring into existence. After them trails a maintenance crew, ready to repair damage, remove debris or extricate anyone from fallen wreckage.

So thorough have been the preparations for an air emergency at the factory that the State Council of Civilian Defense's Industrial Protection Division has termed it one of the most expertly equipped and drilled air raid units in Rhode Island.

Edward G. Jacobs, Chief Air Raid Warden at the plant, prior to the war was the Industrial and Public Relations Manager at the factory. But with the threat of air raids came a new job for him. With two other employees, Daniel J. Healey and Ernest V. Wilson, he was sent to Amherst College for a special course in air raid precaution work.

An ambulance was constructed from a station wagon with the simple addition of two stretchers and a first aid kit, and the hiring of a nurse. The fire department was started by recruiting some of the men in the plant. The State CD, impressed with results, contributed two 500-gallon trailer pumpers, fully equipped with hose and nozzle. For the men, the company bought rubber coats, boots and hats.

A women's police force was established. All men, not employed at other protection jobs, were trained for the male police force. The foreman in each department was made a warden.

In each department and on every floor, Jacobs and his men erected special cabinets containing among other things:—a shovel, a crow bar, a fire ax, a two and one-half gallon can of foam extinguisher, a quart of carbon tetrachloride, three knapsack pumps, a number of pails of sand, several pails of water, 100 feet of rope and a lantern. Nearby, are closets containing the firemen's boots, hats and coats.

The Providence Fire Department, which has already been saved the trouble of putting out three fires at the plant has designated the RITCO fire company as an auxiliary unit for the entire north end of the city.

Donald I. Rogers in "Providence Sunday Journal" of April 25, 1943

Fire Chief's Son Decorated

Secretary Knox of the United States Navy has presented the Navy and Marine Corps Medal to Lieutenant Emmett A. Scanlan Jr., U.S.N.R. Lieutenant Scanlan is the son of the late Chief of the Fire Prevention Bureau of the Kansas City Fire Department who died suddenly last December 26. The citation which Secretary Knox personally read to Lieutenant Scanlan runs like this:

"For heroic conduct as Officer in Charge of Fire Fighting Groups on board a United States warship. Boarding the vessel which had been beached and badly gutted by fire, Lieutenant Scanlan in spite of the ever-present danger of combustible gases and explosion of unflooded magazines, worked tirelessly and skillfully in directing fire fighting operations. His intimate knowledge of the problems confronting him and his detailed preparations for the undertaking were largely responsible for the successful accomplishment of the expedition. His resourcefulness and loyal devotion to duty were in keeping with the highest traditions of the U. S. Naval Service."

Lieutenant Scanlan is not a professional fireman. He is an engineer, 32 years old, with a degree from Armour College, Chicago. He left a lucrative practice with a Kansas City fire insurance company to join the Navy. He is the principal assistant to Lieutenant Commander Harold J. Burke, U.S.N.R. of the Damage Control section of the Bureau of Ships. Commander Burke is a Division Chief of the New York Fire Department on military leave.

In the absence of Commander Burke who was in another theatre of war at the time, Lieutenant Scanlan organized a staff of fire fighting officers and men and flew from Norfolk Navy Yard to the scene of the fire at an unnamed Atlantic coast port of South America—said to be the longest "run" to a fire ever made.

JERRY DALY.

The New and Old Garb for Fire Fighters

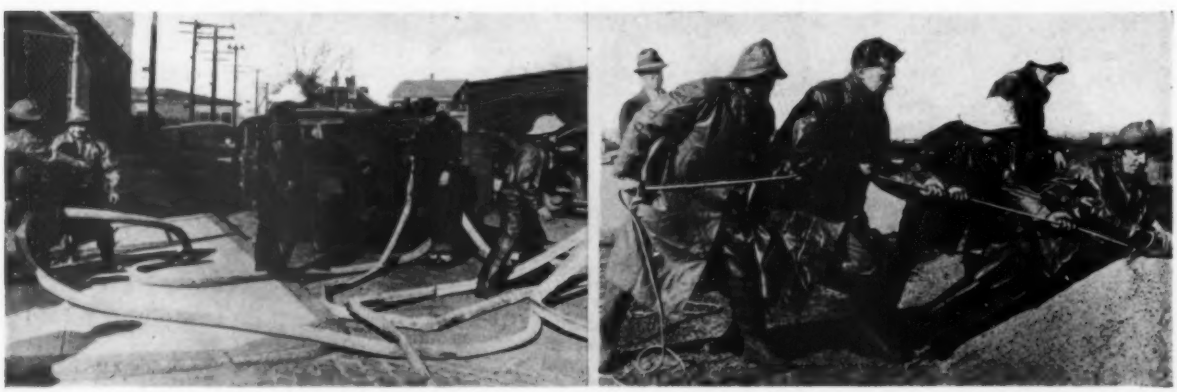
The above illustration shows the change made by the New Haven, Conn., Fire Department from the old to the new style helmets and rubber coats. The helmets provide better head protection, and the coats, with two white stripes painted across both the arms and body, make the men under blackout conditions more visible and not subjected to unusual hazards that confront firemen during actual fire fighting operations.

International Municipal Signal Association to Meet

The International Municipal Signal Association will hold its forty-eighth annual meeting at the Hotel Statler in Cleveland, Ohio, on September 27-29. It will be a War Conference.

This year's annual meeting will in many respects be the most important ever held, defining and demonstrating wartime work and post-war opportunities of the field. Officials from government bureaus will appear on the program. Fire alarm, police telegraph, traffic signals, radio communication, air raid warning systems and other communications contributing to public safety will be covered.

Reservations should be made through Mr. Irvin Shulsinger, Secretary, at 8 East 41st Street, New York, N. Y.



Photos by "Providence Journal"

RITCO Auxiliaries at Work

Left: Portable trailer being hooked up to hydrant. Right: Line of hose being hauled up over side of building.

A record at Chicago

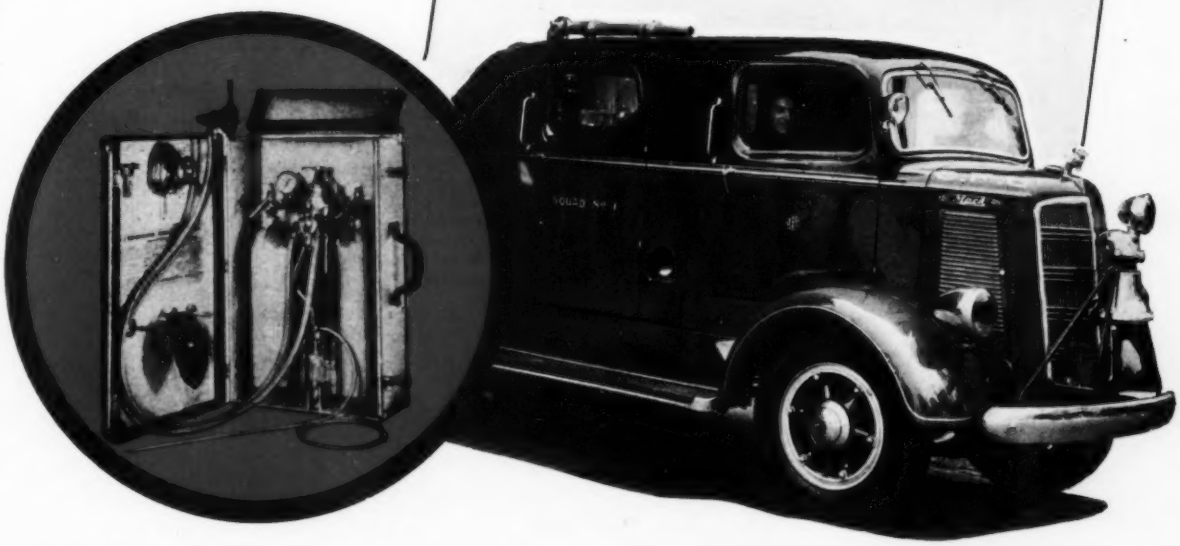
and another outstanding achievement for the

E & J

RESUSCITATOR INHALATOR and ASPIRATOR

With the largest number of cases on record where treatment was given with mechanical resuscitation, the first aid service performed by the Chicago Fire Department stands unsurpassed by any large city in the world. A recent report in the Journal of the American Medical Association, covering this work, shows that many lives were saved—including critical cases where persons whose breathing had completely stopped were revived.

The fact that Chicago has used E & J Resuscitators for thirteen years and has equipped each of its fleet of up-to-date squad cars (illustrated below) with a Fox Model E & J Resuscitator, Inhalator and Aspirator, is recognition that speaks for itself.



PERFORMANCE COUNTS!

In judging the value of any equipment there can be no better determining factor than time-tested performance in actual service. That the Chicago Fire Department, under the outstanding and progressive leadership of Fire Commissioner M. J. Corrigan, has equipped all of its modern squad cars with E & J Resuscitators after long years of satisfactory results is the soundest kind of evidence of E & J dependability. It is typical of the experience reported by the many other leading cities that have adopted this modern automatic breathing machine.

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Ocean Grove Junior Fire Department

The month of May marked the completion of the first year of service by the Ocean Grove Junior Fire Company, an auxiliary group of twenty-one youth of the sixteen to eighteen age level, aiding the war-weakened manpower of the senior department in the New Jersey coastal town.

Hose Line Operated by Ocean Grove Juniors

The group, organized in May, 1942, has answered alarms of the department for in and out-of-town fires and has shown a great enthusiasm for working at fires. Despite popular opinion when the plan was instituted in Ocean Grove, the youths have proved of invaluable assistance to the regular department, whose ranks have been riddled by the draft and defense industries, and are now as well trained and as experienced as the majority of the regular men.

The Ocean Grove Board of Fire Commissioners, realizing the growing list of vacancies in the department lists, approved a plan to organize the youths, and have gained the support of school and municipal authorities for the juniors. The school authorities have agreed to allow the juniors to leave school for alarms and air raids.

While the juniors also are feeling the hand of the selective service, seven of the original twenty-one having been inducted into the Army, Navy or Marines, there seems to be a good supply of reserves and enthusiastic applicants continually awaiting a chance to gain entrance into the organizations. Insurance rates have limited the membership to twenty-one—seven for each of the three Ocean Grove fire companies.

The junior organization allows for a chief, assistant chief and captain to run the group. The group is responsible only to regular fire officers and not the rank and file of the senior department.

The juniors, through training and constant drilling, are capable of handling any hose line or ladder the department uses and can do everything except drive the apparatus.

Under the direction of a committee from the senior department, the juniors are regularly drilled in hose work, ladder work and in rescue work in realistic fire drills.

To protect the young firemen, the Board of Fire Commissioners has arranged for insurance coverage for the juniors and has purchased badges for identification, helmets, coats and boots for them. The juniors are allowed to ride on any of the six Ocean Grove pieces of apparatus, but their equipment is carried on trucks assigned to them.

With the usual enthusiasm of youth, the juniors have been "showing up" many of the seniors with their speed in answering alarms and their knowledge of what to do and how to do it when they arrive at the scene.

To date their only complaint is that there is not enough action, for which the regulars, run ragged by the fast working youths, are well pleased.

So far, junior departments have been organized in Ocean Grove, Hamilton, Whitesville, Allenhurst, Point Pleasant Beach, Point Pleasant Boro, Wanamassa, Wayside, Belmar, West Belmar, and Lakewood. Junior companies are being organized in Bradley Beach and Deal.

In Ocean Grove, Gordon Macauley is the present chief, succeeding Les Broome, now in the Army Air Force, and William Brennecke, in the Navy. Myron Harris is assistant chief and Raymond Lansinger is captain.

The group operates under a senior committee including Curwin F. Dodd, Ocean Grove fire inspector and fire lieutenants William Schwartz, Frank Wilgus, Edward Sweet and Otto Stoll, Jr.

FRANK WILGUS.

Oswego Mill Destroyed in Fire

Fire of unknown origin swept through the Checkerboard Feed Mill in Oswego, New York, on May 29, causing damage estimated at $150,000.

The loss is a particularly heavy one as the mill was in the midst of its rush season, with farmers as well as scores of persons who had never before gone into the poultry business, swamping the concern with orders for mash and feed.

Fire started sometime after 9 P. M. on May 28 but was not discovered until 1:40 A. M. by Patrolman Dave Lewis. The fire was then breaking through the roof.

As soon as first lines were laid in, the off-shift were called back. The Coast Guard also responded with two auxiliary pumpers and a small fireboat.

In all, sixteen streams poured water on the fire until noon on Saturday. The fireboat and auxiliary pumpers did a real job along with the local department in confining the fire to the original building. One loaded box car alongside the building did not burn but an old car used as a tool storage shed by the New York Central Railroad was consumed by the fire. Another fire in nearby grass threatened the Burke Lumber Company and Ames Iron Works. Flying embers were quickly doused by fire watchers on the Ames Iron Works roof.

The plant was used as a distribution point for chicken feed and farm supplies. It was working from ten to fourteen hours a day because of the rush season.

JAMES R. JACKSON.

Fire Hits Pontiac Bus Line

A $150,000 fire destroyed the garage and eight of the thirty-five buses owned by the Pontiac City Lines, Inc., Pontiac, Mich., on July 13.

The fire started at 2:30 a.m. apparently from a static spark while a bus was being refueled in the garage. The blazing gasoline fumes quickly ignited the frame roof of the one-story concrete structure.

Drivers and maintenance men on duty, augmented by other employees, pushed a number of buses to safety, but the flames, spreading rapidly as gasoline tanks exploded, prevented them from reaching eight vehicles.

Four engine companies and two ladder companies brought the flames under control after an hour and a half.

Instruction of Junior Fire Department Includes Ladder Raising

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You need good weapons. General Detroit is proud to be able to supply them. Rely on General's complete line of fire fighting equipment, made by a company skilled in quality mass production —a leader in its field for more than 40 years!

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For Practical Discussion of Current Fire Department and Fire Management Problems

RESPONDING TO FIRE ALARMS DURING BLACKOUTS

THE discussion in this round table is a continuation of that which appeared in the July issue of FIRE ENGINEERING on responding to fire alarms during blackouts.

The generous response from our readers made it necessary to carry the discussion over to this issue.

Readers are invited to send in their comments on this subject or on next month's subject, which appears in the box on the following page. Address communications to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

HERE IS THE PROBLEM

What precautions do you take during blackouts to insure prompt and safe get-away from stations in case of fire alarm?

Do you use regular headlights, oscillating or flashing red lights, and sirens when responding to alarms during blackout?

What recommendations would you make for safe and prompt travel for fires during blackouts?

Discussion of the Topic

Oscar A. Grab, Chief, New Rochelle, N. Y.: Company officers are instructed to use care. Excessive speed is out.

We use regular headlights and sirens. We do not find that the department is slowed up to any great degree.

My main recommendation is that drivers drive carefully.

Samuel J. Pope, Chief, Boston, Mass.: During blackouts the apparatus responds using regular headlights, oscillating red lights and sirens. Response is slowed up a little during blackouts as a precautionary measure.

George E. McGaw, Chief, Fall River, Mass.: We answer fire alarms the same as in ordinary times. The only precaution is in our lighting system. We use less lights. They are dimmed out and work automatically, going out after a certain length of time, leaving the stations in darkness.

The top part of our headlights are blacked out. We do not find that we are slowed up in responding to an alarm to any degree.

Under blackout conditions I would recommend that all precautions necessary be taken in traveling to fires.

Fred P. Higgins, Chief, Grand Rapids, Mich.: We are proceeding to fires as usual. We use regular headlights, oscillating lights and sirens when responding to an alarm.

We take special care at intersections, street repair areas and public utility operations. We have not been dangerously slowed up.

I believe responses should be as near normal as possible with allowances made to fit conditions which might arise.

M. J. Hayden, Chief, Bridgeport, Conn.: As soon as an alarm is received over talk alarm, apparatus lights are turned on and companies respond as usual.

Headlights are used as well as oscillating red lights until the fire is reached. Then they are turned off. Best results are obtained this way.

Response is somewhat slowed by dimout regulations, but with care we have had no trouble.

During blackouts care should be taken by drivers in responding to fires as there are many cars on the road at all hours of the night due to the hours in the defense plants.

E. F. Dahill, Chief, New Bedford, Mass.: All men on duty are stationed near apparatus during blackout period.

All headlights are partially dimmed; red lights are used but no sirens during blackout period. We have not found response slowed up by these restrictions.

Edward J. Cannon, Chief, Norfolk, Va.: We make a slow get-away and travel at ten to fifteen miles an hour.

We use the regular headlight with half of the lens blacked out with a black-blue paint which throws the beam to the ground. Sirens are used.

If we comply with all the blackout restrictions, we find that response is slowed up to a certain extent.

J. L. Croom, Chief, Wilmington, N. C.: Our men are given special training in case of an alarm during a blackout.

We do not use regular headlights, oscillating lights or sirens when responding to an alarm. Response has been somewhat slowed up by these restrictions.

I would recommend that drivers drive carefully and that the men be protected by riding in hose basket.

Albert J. Zoch, Chief, Michigan City, Ind.: We use regular headlights fitted for blackouts similar to those used for other mobile units. We also use flashing red lights to indicate that we are an emergency piece of equipment answering a call as do police and ambulance units. No other units are allowed to use flashing red lights.

We find response slowed up at the Control Center which delays sending out the call. Our system at the Control Center involves all units from fire on down and we must check with the Commander to see which units he wishes dispatched. This takes considerable time. We have our units numbered, for fire—F-1, F-2, F-3, etc.; for police, P-1, P-2, etc., and for ambulance A-1, etc., and they are dispatched accordingly. Our orders to send these units out are delayed by public utilities, road repair and demolition and water works, whose duties are not necessarily as essential as police, fire and medical. Fire and fatalities require immediate response, while the others could make temporary repairs and shut-offs which would not require their full attention until after the air raid was over. We have no centralized dispatch center as do most fire departments, but if I were allowed to call the Fire Departmen immediately from the Control Center instead of waiting until the while message is intact and sent out by a communications officer at the Center, I could have my apparatus on its way to a fire before the whole message were compiled. There is certainly a lot of time lost in this manner, and I believe the National Office of Civilian Defense should help out in devising different methods of dispatch in these smaller communities.

For safe and prompt travel to fires I would recommend a solution of the above, and also recommend that it would be good practice if all emergency units, police, fire and medical, use red flasher lights or oscillating lights to indicate that an emergency unit is responding. This would call for some assistance from air raid wardens in seeing that these units reach their destination without any interruption.

S. J. Flores, Chief, Shreveport, La.: We turn lights on when going to fires and turn them off when arriving at them. We use regular headlights when responding. We find that we are

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Buy GENERAL, the dependable fire truck—pacesetter in design as well as performance. Write for specifications to meet your requirements. Our sales and engineering departments are at your disposal.

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slowed up somewhat by the blackout restrictions.

John M. Evans, Chief, New Orleans, La.: We take precautions during blackouts by leaving the stations slowly and carefully. We use regular headlights.

I would recommend the use of headlights and sirens in order to insure prompt and safe travel to fires.

William F. Carleton, Chief, South Gate, Cal.: The only precautions taken are that the auxiliary fire equipment is disbursed from headquarters stations to prearranged locations on the alert signal, and auxiliary policemen are assigned to the fire stations for the protection of equipment and traffic, if any.

All emergency equipment responding on calls, responds with full headlights, including the red light.

We have not found that we have been unduly slowed up in responding to fires. The drivers must be on the alert for pedestrians or vehicles attempting to seek shelter during a blackout.

My opinion has always been that emergency equipment should respond with full headlights on and the red light, cutting them off immediately upon arrival at the scene of the fire or accident. All other traffic should be stopped and pedestrians or sightseers cleared from the streets as soon as possible.

W. J. Mohr, Chief, Santa Monica, Cal.: Our present orders are to respond as usual with headlights, red lights and sirens. The new California blackout order or regulation gives us one full headlight and one blacked out with civilian defense hood.

I would recommend that right-of-way be given as in the past. During a blackout period there is no more danger traveling than at any other time. In fact, it is safer because people are on the alert.

Terence Mulligan, Chief, Sacramento, Cal.: Statutory emergency vehicles are permitted to move in blackouts with normal full headlights and red spotlight, according to a decision of the Ninth Regional Civilian Defense Board, concurred in by the Western Defense Command and Fourth Army. The exact wording of the approved resolution follows: "Vehicles which are classified as authorized emergency vehicles under the applicable federal, state and local law, when operated by authorized personnel and when displaying an illuminated red spotlight and when responding to a fire alarm, or when going to or transferring a person who is in apparent need of immediate emergency medical or surgical care, or when responding to some other emergency involving the protection of life or property, may operate during periods of blackout using normal headlight illumination." The Army is going to change this setup, however.

Buford D. Pinkerton, Chief, Bellingham, Wash.: We reduce speed as much as possible and yet are prompt in responding to alarms. A fire truck is of no value to anyone if it fails to arrive at a fire when called.

We use regular headlights, oscillating lights, sirens and bells when responding to a fire. However, we observe blackout conditions when returning to quarters.

I believe that response is slowed up by the restrictions, especially by the delay at the control center in sending in calls to the fire department.

I believe that closer cooperation with civilian defense units is necessary. For example, an air raid warden could be of assistance to all of us in signalling any obstacle that might be in the way and keeping pedestrians in the clear; also in giving the right of way to speed up the response when all is safe.

Whenever fire calls come in to the control center, they should immediately dispatch fire equipment and then proceed with other agencies. The delay seems to be in getting written reports out before any units are dispatched, thereby losing valuable time to the fire department.

F. J. Roddy, Chief, Monroe, La.: During blackouts the men are instructed to remain close to apparatus to be sure of right location when alarm is received. They then proceed slowly out of the station.

In traveling to the scene of the fire, we travel with red light on only.

I would recommend that all auxiliary and regular fire equipment travel at a very slow rate of speed to insure safety.

John A. Keefe, Chief, Detroit, Mich.: The only blackouts this city has had to date have been test blackouts. On the alert warning signal, which is received over the telegraph register, all commanding officers black out their entire quarters and a hand lantern is used at each instrument board in the event an alarm is received. Blackout material has been placed over the windows of several of the fire stations which permits the use of regular lighting systems in these stations.

We use regular headlights, oscillating or flashing red lights and sirens when responding to an alarm during a blackout.

Instructions have been given to all commanding officers to take adequate precautions in responding to alarms of fire during period of a test blackout. We have not noticed any slowing up in response to alarms during such periods.

My recommendation for safe and prompt response to fires during blackouts is to use regular apparatus light accessories, such as dimmed headlights and oscillating or flashing red lights and sirens, with further instructions to reduce the speed of apparatus to provide a reasonable degree of safety to firemen and civilians as well as apparatus.

W. B. Sykes, Chief, Portsmouth, Va.: I have not found it necessary to take any extra precautions in order to get away from the station in case of fire alarms.

Our headlights have been painted to meet the requirements of the East Coast dimout law, and no red lights are allowed to burn on the front of machines. Sirens are used only when absolutely necessary.

Due to the fact that we travel more slowly during a blackout than we do under normal conditions, we are slowed up to a certain extent.

It has been our good luck not to have had a run during a blackout since the new law allowing the traffic to move on the blue signal went into effect.

Official U. S. Marine Corps Photo

Leatherneck Fire Eaters

Equally efficient at extinguishing fire as they are the Japs are the U. S. Marines at Guantanamo Bay, Cuba. Shown wielding his artistic temperament is this versatile Marine Platoon Sergeant, Wilton J. Outen, Chief of the Leathernecks' fire department at this Marine base. He is not only a well trained fighting man, but he has also received special fire training.

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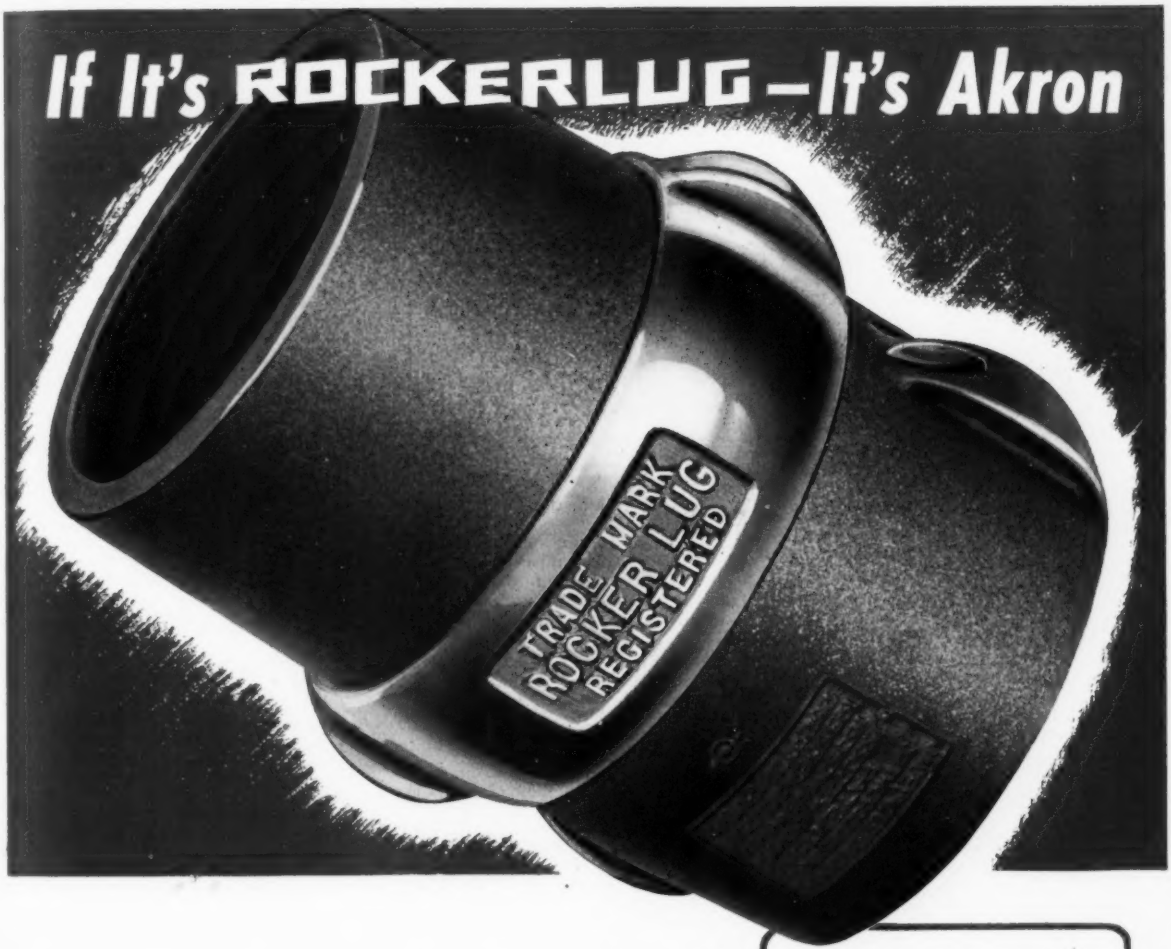

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A guarantee of instant engagement in daylight or darkness. An assurance against loss of time in getting hose into action.

AKRON BRASS

FIRE FIGHTING EQUIPMENT

As we have not had very much experience in working under blackout conditions, I know of no recommendations to make unless that all emergency cars traveling during a blackout be equipped with exhaust whistles which would not be confused with air raid sirens.

J. E. Parrish, Chief, San Diego, Cal.: In blackouts, we drive all apparatus out of the fire stations to predetermined locations and camouflage them. All lights are kept out.

We respond with regular headlights. Upon arrival at the fire these are turned out and blackout lights turned on.

There is a definite slow-up of response during blackouts due to blackout conditions.

Apparatus should travel at a safe speed and on the alert at all times. If the enemy aircraft is directly overhead or anti-aircraft fire becomes intense, it should stop, and its crew seek cover. Lights should be turned out.

Thomas M. Lane, Chief, Alameda, Cal.: We use regular headlights and extinguish them on arrival at fire. We drive home slowly, using Flash-Lite.

Response is slowed up slightly for we don't travel full speed unless we see a "burner."

Apparatus should travel cautiously during a blackout and should use regular headlights and red safety lights. Our fire departments are allowed by the War Department Command in this vicinity to use full headlights on regular authorized fire equipment.

H. F. Lyles, Chief, Houston, Tex.: We use apparatus at the stations for warning purposes when blackouts are necessary. The apparatus is stationed on the ramps in front of stations and sirens sounded on signal. We use no lights in the stations, except in the case of an alarm when it is necessary to turn on a very small light to ascertain location and such information as necessary for prompt response. It is turned off before the company leaves. We have never had an alarm during one of these infrequent blackouts, but I do not anticipate much delay, if any, in a prompt get-away with safety.

In responding to alarms it is necessary to use the spotlight pointed to the ground on some apparatus and oscillating red lights on others. Officers have instructions to use their own judgment where a fire exists.

Our department has instructions to proceed at a speed of not greater than twenty miles per hour during blackouts, except when in the judgment of the officer in charge quicker arrival at the scene of a fire demands greater speed.

George E. Renken, Chief, Laredo, Tex.: It has been necessary for the department to change the speed regulations for fire equipment during blackouts, as reduction of speed is very essential.

We use dim lights during blackouts; all other lights are out. We use a bell instead of a siren to avoid confusion.

Blackout precautions naturally have slowed down response to fires.

I would recommend that all fire equipment be equipped with blackout lights.

Albert J. Sullivan, Chief, San Francisco, Cal.: Our department responds with full headlights and one red light during a blackout.

Additional precautions slow down to some extent response to alarms.

I would recommend that all traffic lanes be cleared as far as possible and that full lighting be allowed.

Allan C. DuRee, Chief, Long Beach, Cal.: Upon sounding of the alert for blackout conditions, one fireman at each station is assigned to keep the street and approach to the station clear for ready response.

In order to have a minimum amount of light on the apparatus floor, small electric blackout bulbs are kept installed on one circuit at all times. This provides sufficient light to see apparatus and minimize injuries.

As to use of lights on apparatus, all fire departments of Southern California arbitrarily adopted a policy of using full headlights, and lights and siren when responding to an emergency during a blackout. This policy was adopted at the outset of blackout procedure, and provides that "all authorized emergency vehicles, including police, fire and publicly owned ambulances may be operated during a period of air raid alarm with headlights, tail lights, license lights, dashboard lights lighted and an identifying red light on the front of the vehicle.

A new state law has been enacted and is now in effect which legalizes the procedure we formerly carried out.

George W. Hisscock, Chief, Port Huron, Mich.: We use headlights on trucks in getting out of quarters and also in responding to alarms during a blackout. These lights are dimmed.

We use the red flasher lights and also sirens in responding to alarms during blackout. We find in so doing that we are slowed up just a trifle.

I feel that it is as important that the fire department arrive at the fire and get it under control, if possible, before it makes a large glow in the sky to attract enemy planes, as it would be not to use the headlights for fear of their being seen. I feel that the safest way and the proper way to respond to a fire during a blackout is to use headlights and sirens as outlined above.

C. L. Bolz, Chief, Pasadena, Cal.: All stations are equipped with blackout materials which are placed in position on yellow signal, and OCD and regular apparatus is placed in alert positions. This permits use of lights on apparatus floor to read tapes, maps, etc., and avoids confusion in taking places on apparatus. Lights are extinguished before leaving station.

The following paragraphs from our "Order for Emergency Duties" Describes our method of responding to fires:

"6. When responding with major equipment to fire calls during blackout, proceed with caution with all regular peacetime lights in operation, with the exception of front spot lights and rear spot lights.

"7. When major equipment is returning from a fire call during blackout, a Chief's car or other designated car will pilot major equipment which must use official blackout lights only. The Chief's car, when piloting, will use parking or dimmed lights only.

"8. Chief's cars, when responding, will use parking or dimmed lights and red warning lights.

"9. Sirens will be sounded on all emergency fire calls."

Naturally, response is slowed up for several reasons such as slower speed, inability to see and read street signs, house numbers, fire hydrants, etc.

Obviously you need adequate lights for safe and prompt travel to fires during a blackout. Just try it once without lights, and you will appreciate the almost utter impossibility of getting anywhere on a dark night with the so-called regulation blackout lights.

Hugh Brinkley, Chief, Corpus Christi, Tex.: We use blackout curtains in the Fire Alarm Office. We use our lights on the trucks for safety. When we reach the fire or location we turn off all lights on our apparatus.

My recommendation for safety in going to fires during blackouts is not to drive over twenty-five or thirty miles per hour. I also would recommend using lights.

We have had calls during blackouts, and have made them just like any other call.

W. G. Lutkey, Chief, Oakland, Cal.: We use regular headlights, red lights and sirens when responding to an alarm of fire during a blackout. We do, however, drive more slowly during a blackout.

I believe that it is necessary to have all headlights burning and sirens wide open. Speed should be twenty-five miles an hour.

George E. Hare, Chief, Jacksonville, Fla.: We use regular headlights with the top half blacked out, red lights and sirens when responding to alarms during a blackout.

We find response slowed up by the blackout restrictions.

I believe speed should be lessened. Proper lighting is necessary for safe and prompt travel to fires during blackouts.

* * *

The following replies are in answer to a previous question on the use of a master fire alarm box in places of public assembly.

L. M. Funk, Chief, Dallas, Tex.: Some of our public buildings do have fire alarm boxes. However, it is not a requirement.

(Continued on page 537)

HERE IS THE QUESTION FOR THE NEXT ISSUE

What has been your experience with malleable iron couplings on fire hose:

1. **About how many are in use in your department?**
2. **How long have they been in service?**
3. **Have you noticed any rusting of couplings, and how severe has it been?**
4. **What paint, lacquer, etc., have you used to check rusting?**
5. **What were the results?**

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WRITE FOR INFORMATION

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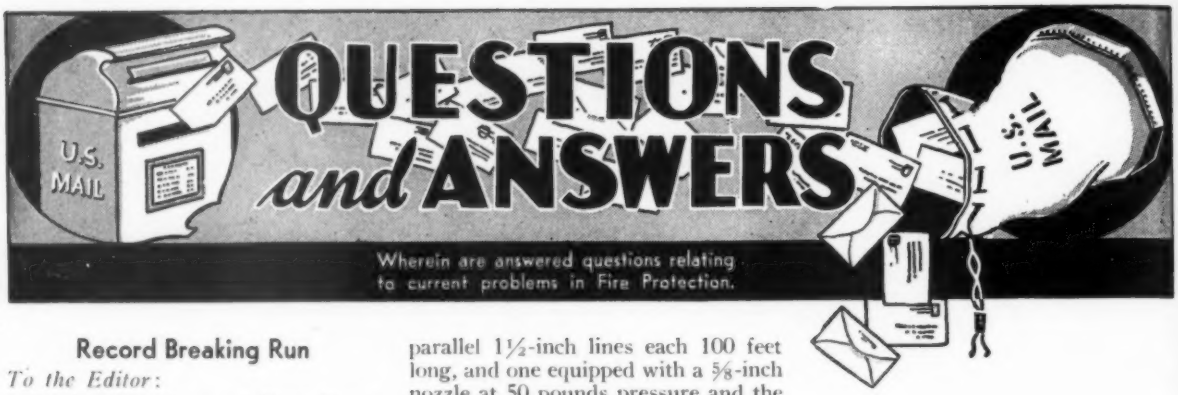

Record Breaking Run

To the Editor:

In the June issue of FIRE ENGINEERING, on Page 313, appears an article headed "Fort Tilden Fire Department Breaks Record."

Would you be kind enough to let me know exactly under what conditions this record was broken. For instance, was nozzle attached to the 2½-inch hose when they started to stretch; what weight hose, double or single jacket; was strainer on hand suction; if so, when was it put on; what type and capacity was the fire truck used?

The reason I am asking all these questions is that my firemen (soldiers) feel that they want to try for the same record.

A. B. C.

Answer: Chief Leonard Genovese of the Fort Tilden Fire Department writes us as follows:

"I am very glad to answer the questions submitted regarding the record breaking runs made by the Fort Tilden Fire Department.

"Time was taken from a dead stop. The nozzle was attached to the 2½-inch double jacket hose as is the custom with the majority of fire departments. Stretch was made while apparatus was rolling. Man with nozzle aided the other members to connect up the two lengths of suction (4½-inch). Strainer was attached while enroute to dock. No knots were made on strainer as rope is spliced on. Strainer was dropped overboard, pulled up to within a foot and a half of the surface and a chimney hitch made to take the strain.

"The 2½-inch hose had been broken by this time and attached to the discharge of the pumper. Nozzle man returned to his original position, joined later by another member, who handled the line as water is drafted.

"The pumper was a 500-gallon rotary gear type. Pressure at the engine was 50 pounds (a safety measure) when water showed at the nozzle."

Branched Lines

To the Editor:

A single engine is supplying two lines, one of them 700 feet in length, 2½-inch in diameter, equipped with a 1-inch nozzle at 50 pounds pressure and the second line, 500 feet in length, 2½-inch diameter, branched into two parallel 1½-inch lines each 100 feet long, and one equipped with a ⅝-inch nozzle at 50 pounds pressure and the other a ½-inch nozzle at 50 pounds pressure. What will be the pressure at the engine? D. G.

Answer: The engine pressure needed to supply the 700-foot line will be 128 pounds (by table).

Solution for the engine pressure on the 500-foot line is as follows:

⅝-inch nozzle at 50 pounds pressure discharges 82 gallons per minute.

½-inch nozzle at 50 pounds pressure discharges 52.5 gallons per minute.

Friction loss in 100 feet of 1½-inch hose at a flow of 82 gallons per minute is 23 pounds.

Friction loss in 100 feet of 1½-inch hose at a flow of 52.5 gallons is 10.2 pounds.

Thus the pressure at the wye may be either 23 plus 50 = 73 pounds or 10.2 plus 50 = 60.2 pounds.

It must be assumed that the lower engine pressure, 60.2 pounds, is accomplished by throttling the discharge valve feeding this line.

The flow through the 2½-inch line will be equal to 82.0 plus 52.5 or 134.5 gallons per minute.

The friction loss per 100 feet of 2½-inch hose at 134.5 gallons per minute equals 4.56 pounds.

The friction loss in 500 feet of hose will be 5 times 4.56 or 22.8 pounds.

Thus the pressure at the engine, based upon the greater pressure at the wye, namely 73 pounds, equals 73 plus 22.8, or 95.8 pounds.

Discharge from Branched Lines

To the Editor:

A line of 2½-inch hose 100 ft. long is stretched from a hydrant. It is branched into two 2½-inch lines also 100 feet long and equipped with 1-inch tips. How much pressure will there be at each tip and how much water will be discharged from each line? Hydrant pressure is 90 pounds.

Will the pressure and quantity of water discharged be equally divided between the two lines? J. A. G.

Answer: The answer to your problem in hydraulics is as follows:

First combine the parallel lines.

$100 \div 3.6 = 27.78$ feet of 2½-inch hose.

The total length is then $100 + 27.78 = 127.78$ feet.

Then combine the two nozzles:

$1 \times 1 = 1$

$1 \times 1 = 1$

$1 + 1 = 2$

$\sqrt{2} = 1.414$ inches

The nearest standard size tip to a 1.414 inch tip is a 1⅜-inch tip.

The layout is thus equivalent to a single stretch of 2½-inch hose 127.78 feet in length, equipped with a 1⅜-inch nozzle.

Next find the nozzle pressures:

N. P. = E. P. ÷ (1.1 + KL)

E. P. = 90 pounds.

K (for 2½-inch hose and 1⅜-inch nozzle) is .341.

L, the number of 50-foot lengths of hose in the line is 127.78 ÷ 50, or 2.5556.

N. P. = 90 ÷ (1.1 + .341 × 2.5556)

= 90 ÷ 1.97 = 45.7 pounds approximately.

This pressure, 45.7 pounds, is the pressure at each 1-inch nozzle.

Next find the discharge from each 1-inch nozzle:

Discharge = $29.7 \times d \times d \times \sqrt{P}$

D = nozzle diameter (1-inch)

P = nozzle pressure (45.7 pounds)

D = $29.7 \times 1 \times 1 \times \sqrt{45.7}$

= $29.7 \times 6.76 = 200.772$

= 201 gallons per minute approximately.

Discharge from the two 1-inch nozzles is $2 \times 201 = 402$ gallons per minute.

Pumping to an Elevation

To the Editor:

I drive and operate a 750-gallon pumper with a rated capacity of 120 pounds pressure. Hydrant pressures in our city are from 95 to 105 pounds pressure.

In stretching a 500-foot line of 2½-inch hose up a 80-foot building, is it possible to raise the water up to the roof and also to obtain 40 pounds at the nozzle?

N. V. B.

Answer: The engine will have to deliver sufficient pressure to pump the water a height of 80 feet and give 40 pounds nozzle pressure. In doing this, the friction loss in the line will have to be overcome.

The problem does not state the size of nozzle so we will assume that a 1¼-inch nozzle is employed, as this is the largest nozzle commonly used on 2½-inch hose.

At a pressure of 40 pounds per square inch, the discharge from a 1¼-inch nozzle is 292 gallons per minute. The back pressure due to the elevation of the nozzle above the engine will be 80 × .434, or 34.72 pounds.

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Engine pressure = nozzle pressure × (1.1 + KL)

Nozzle pressure is 40 pounds; K for 1¼-inch nozzle on 2½-inch hose is .248.

L, the number of 50-foot lengths of hose in the line, is 9.

E. P. = 40 × (1.1 + .248 × 9)
= 40 × 3.332
= 133.28 pounds.

The corrected engine pressure will be equal to the engine pressure so solved plus the back pressure, which is 35 pounds approximately.

Therefore, the corrected engine pressure is 133 + 35, or 168 pounds.

The 750-gallon pumper can easily perform this task. Such a pumper can deliver 375 gallons per minute at 200 pounds pressure. The discharge in this case is only 292 gallons per minute, and the pressure will be 158 pounds (engine pressure). Thus no help from the hydrant pressure is needed whatsoever.

Durham Fire Officials Honored

Durham, N. C., firemen and their wives honored Chief Frank Bennett, Assistant Chief B. C. Canada and Captain Claude H. Turner at a barbeque dinner recently.

Mayor W. F. Carr, City Manager Henry A. Yancey, Frank A. Pierson, A. T. Crutchfield and former Congressman W. B. Umstead were guests of the occasion and most of them made addresses praising the work of Chief Bennett and his coworkers.

Lieutenant L. T. Cox of the department presented each of the honored guests with appropriate silver services from the members of the organization.

Lieutenant Cox in making the presentation said: "Chief Bennett entered the fire department on March 1, 1909, when the department was organized on a paid basis. In 1914 he was promoted to Captain, serving with the old hook and ladder company. In 1919 he resigned from the fire department to accept a position with the Durham Book and Stationary Company. On June 1, 1921, he was appointed Chief and has held this position continuously to the present time.

"Assistant Chief Canada was a member of the Volunteer Force and Secretary of No. 1 Company from 1898 to March 1, 1909, remaining in the service when the department was reorganized.

"Captain Turner was also a member of the Volunteer Force, beginning his service in 1897 and is still with us. He did take time out to go to the Spanish American War.

"Chief Bennett, you have achieved successes and recognition in the fire service, here in Durham, in the State and throughout the United States, that we are proud of. It has been said that a good executive is one who is an authority on human relations. We feel that you possess all these qualities in addition to outstanding ability as a fire fighter. June 1, 1921, twenty-two years ago today, you assumed the duties of Chief and during all this time it has always been your aim to increase the efficiency of the Fire Department, promote safer fire conditions in our community and procure better working conditions for your men."

As part of the ceremony, a "Certificate of Appreciation" bearing the Great Seal of the City of Durham was presented to Chief Bennett.

Our inquiring reporter overhauls the firemanic news of the day

Champagne Corks Report Fire

Waiters in a Chicago Loop restaurant thought they were being machine-gunned when they heard explosive popping noises in a storeroom. Investigating with considerable trepidation, they were met by a rail of champagne corks and fire which was raging in the space where prized bottled goods were stored. Damage, reports our correspondent, was $2000. He fails to state how many "undamaged bottles were salvaged." "Corking good alarm system," we calls it.

* * *

Just a Prank!

Cries of "Fire! Help! Police!" brought Hoboken (N. J.) policemen and firemen on the double to Jacobus Hall on campus of Stevens Institute of Technology. When the Brothers arrived, in form of two engine and one truck company, they found Arthur Shadek and Eric Urfer, students, locked in their rooms from the outside. Pranksters had fastened stench bombs to their doors, and beaten it. Many of the Brothers got a good dose of the gases—all in good fun, of course!

* * *

A Phony Town and Sissy Fire Department

Robert (Tex.) Shaw who hails from San Antonio (Tex.) was an usher down home. Friends from the Big City (New York) kept writing him to join them and see the world. He came north, but couldn't find his friends; however—nothing loath, he sallied out to see the bright lights of Broadway and other spots his friends had told him about—also some of those "big fires" he had heard about. Registered at the Mills hotel, he decided—after fruitless excursions that the Big City was pretty tame, and something ought to be done to stir up some excitement. So he hied himself to an unoccupied room on the eighth floor of the hotel, and playfully tossed a match into a mattress. From a vantage point in the hall, he saw a porter grab a shiny thing off the wall and put out the fire. **"Nuts"** sez Tex, so he went down to the second floor and started two more mattress fires. They were quickly put out—and still no fire engines appeared—what Tex really longed for. Before he could try again he was nabbed by a house detective and hailed to Felony court to answer charge of arson. In court, Tex. claimed New York is a phony town, and you can have it. **"Why you can't even see a fire engine roll in this burg"** he complained bitterly in the line-up. . . . **"Now in San Antonio—" "But what about those fires you started"** interrupted a police captain. **"They were put out and in sissy fashion"** replied man-of-the-world-Tex (just 18).

* * *

Unexpected Rodeo

Things are never dull in Los Angeles. When Chief Alderson, and his obliging aides are not busy entertaining "visiting firemen" (many of whom come out to "settle down" and enjoy the climate) they are being called on to help quell "zoot soot riots" n' everything, let alone fight fires.

Latest to be sent us by our L. A. newsclipper is about a cattle truck, which took fire right in the city, and brought the Brothers on the jump. Spectators and firemen managed to release the eleven penned up cattle in time to prevent 'em from burning to death, but catching them was another job. According to our informant, firemen and spectators staged a swell if impromptu rodeo as a result of which some of the blueshirts developed cattle-catching techniques all their own. Tennyrate, the owner got back his cattle and the Brothers wrote it all down in the "journal" as **"all in the day's work."**

* * *

Saw Wasps—Burned Same (and House!)

Earle Robinson, Iowa newsclipper sends us one about Harry Coblets of Leavenworth (Kans.) who had wasps in his attic and decided to do something about it. So he squeezed himself into the cramped attic space, along with some oil soaked rags at the end of a stick. Harry ignited the rags and poked 'em toward the nests. The nests ignited all right, but so did the house. Coblets attempted to back out for a bucket of water and got wedged in the narrow attic opening. By the time he worked free, and the Braves had arrived, the nests were all destroyed, all right, and so was a large part of the roof.

* * *

Write Your Own Caption!

This'un came from the *New Yorker*:

"Battalion chiefs shall make an immediate personal investigation of each of the widows residing within their battalion districts, as shown on the back of the cards, to determine whether or not they are still living or have remarried.—Fire Department orders in the Times.

"All right, firemen, that's enough out of you!" says the New Yorker.

* * *

Sensitive Firemen!

Somehow or other, the item about the Plaistow (N. H.) vamps, sent us by several newshawks was overlooked until now. Albeit a year or so tardy it's too good to omit.

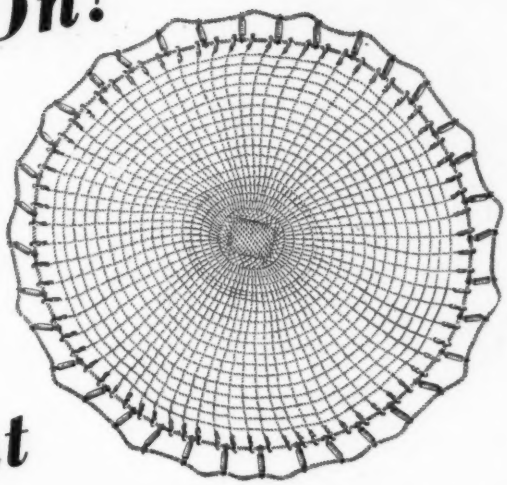
Seems that fire started at the home of George W. Roberts, that community, and the Vols. responded speedily. Spectators, also arrived in numbers, and soon proceeded to express in loud tones their criticisms of the firefighting methods being employed by the Vamps. So loud and so biting did the comments come that the firefighters turned their hose on the

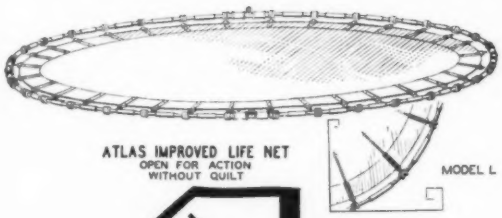
(*Continued on page* 530)

Time Marches On!

The Old Rope Net

Definitely outmoded, dangerous to jumper and men holding net. On impact, net hits the ground and pulls the men into it.





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An improvement over the old Rope Net but still a far cry from the safe, efficient net that ATLAS offers today.

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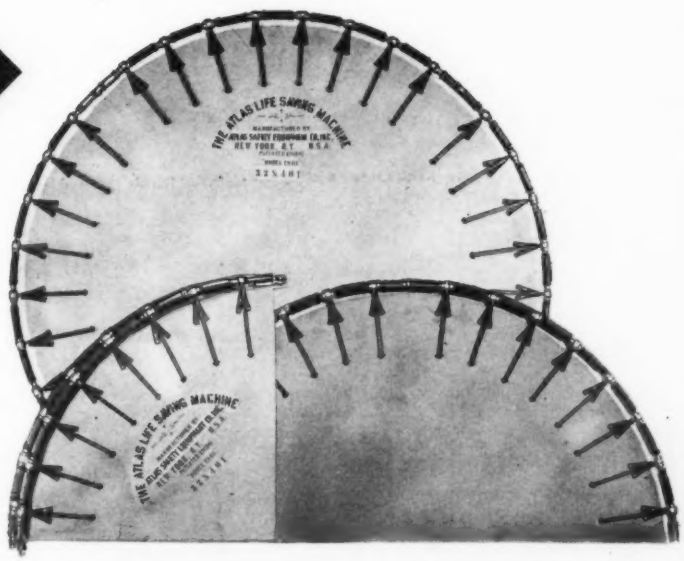

BECAUSE we have met the demands of fire chiefs for a safer and better net by incorporating a number of exclusive patented features. The result is a dependable, practical Life Net — simple and easy to operate. Its record of service stands as an unequalled recommendation.

Science plays a big part in fire fighting today and it is just as important in life saving work. That's another reason why the ATLAS stands as the leader.

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President

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FOR over sixty-four years we have been making badges. Many changes have come to the fire fighting forces of our country, changes in technique and changes in apparatus and equipment. However, the quality and workmanship of Braxmar Badges remain unchanged. The same good long-standing standards established in 1879 still dictate the quality of our latest products.

It is true that nickel, chromium, brass and copper are no longer available. These are vital material and have gone to war. Braxmar, today is manufacturing badges of sterling silver, sterling silver gold plated, rolled gold on sterling silver, and 14K gold. After the war, we are confident these non-restricted metals will again be available —until then, however, you can still be proud of your Braxmar Badge, for it is still the best that money can buy.

The blue covered catalog is the latest published, but write for our new price list effective July 29th. Only prices in the catalog on 14 karat gold items are still in effect. All auto plates are discontinued for the duration.

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Maine Fire Chiefs Meet

The Quarterly Meeting of the Maine Fire Chiefs Association was held at Brunswick with the Brunswick Fire Department as hosts on July 13th. Approximately seventy-five members and associate members gathered for the meeting at the Central Fire Station. President Eugene Ricker of the Portsmouth Navy Yard was unable to be present and the meeting was presided over by Vice President Chief Herbert Constantine of Bangor. Because of the extreme heat the members adjourned to the Knights of Pythias Hall on Pleasant street. Following a short business session, Mr. Harold Treworgy, a member of the Brunswick Committee of Twelve, gave the address of welcome, which was responded to by Chief Joseph W. Randlette of Richmond.

Mr. Ralph Webber of the Maine Civilian Defense Office made a report of the progress of Firemen's Training Schools under the direction of the OCD office. Stating that the five original instructors have trained thirty-eight additional instructors who have devoted a great deal of their time and volunteering their services to operate training schools throughout the state, covering practically all sections with the exception of Aroostook County and plans have now been completed to take in Aroostook County and Washington County, where it is expected more than two hundred firemen will receive the training course. Mr. Webber said he could not speak too highly of the men who had devoted their time to this instruction work.

Chief Curtis Allen of Sanford made a report of the meeting of the Legislative Committee of the Association with the attorney of the Legislative Recess Committee in regard to the bill introduced at the last session of the Maine Legislature creating the office of a State Fire Marshal, which was referred by the Legislature to the Recess Committee to clarify the present laws. Chief Allen, while personally expressing his desire that a State Fire Marshal's Bureau be formed, stated that as it seems impossible to establish such a bureau, it might be necessary to consolidate such an office with the head of another bureau, preferably the insurance department. There was considerable discussion following Chief Allen's report and it was finally voted to empower the committee of the association to continue its work with the Recess Committee of the Legislature and draft a bill which in their opinion might be of the best interest of the Fire Departments and communities of the State.

Mr. Theodore W. Gunn of Concord, N. H., engineer of the New Hampshire Board of Underwriters, gave one of his famous lectures and demonstrations covering gasoline, dust, electrical and other explosives as well as many combinations of spontaneous ignitions.

This is the first time that Mr. Gunn has given his demonstration before the Maine Chiefs Association and it was very much enjoyed by the members.

Following the morning session a Maine shore dinner was served in the dining hall and although the temperature was near one hundred every member seemed to enjoy a very delicious dinner which was served by local ladies.

The afternoon session opened with moving pictures of Bowdoin College football activities of the 1942 season after which a tour was made of the Bowdoin College campus and the Naval Airport which is now being constructed in the town of Brunswick.

Chief Allen Payson, of Camden, was introduced by the president as the newly elected Second Vice President of the New England Association of Fire Chiefs. He will be the third member of the Maine Association to become president of the New England Association. Resolutions of respect were drawn up for the late Chief George Densmore of Hallowell, whose death occurred since the last meeting of the association.

J. W. RANDLETTE

Mill Damaged by Fire

Flames carried by the wind from a fire which razed the milling unit of the Boonville Mills Company in Boonville, Mo., endangered the business district and resulted in the virtual destruction of an apartment house a quarter of a mile south of the mill.

Damage to the mill was estimated at $200,000. About 5,000 bushels of wheat and a small quantity of flour were destroyed.

The fire was discovered about 12:30 o'clock in the sack storage room next to the wheat bins. Boonville's two fire companies, a contingent of fifteen auxiliary firemen and other volunteers fought the smoldering blaze an hour before the flames burst out of control and spread to other sections.

The mill is on the Missouri River, at the north edge of the business district. Picked up by the wind, flames fanned out over a large area. Blazes which started on the roofs of three small houses and a construction company office near the mill were quickly extinguished. Sparks apparently set fire to the apartment house.

The milling unit, of brick, had four stories facing the river and three stories facing a street. About 120 feet long and forty feet wide, the unit was connected by grain chutes to an elevator of concrete construction. In the elevator were about 125,000 bushels of wheat, which was not damaged.

The blaze is believed to have originated from spontaneous ignition. Smoke handicapped the efforts of firemen to find the source of the fire. After the ceiling of the room fell, the flames roared rapidly through the upper stories of the unit. The fire department at Columbia, twenty-six miles east of Boonville, responded to an emergency call and assisted in preventing further spread of the blaze.

When the apartment house fire was discovered, the volunteer department of New Franklin was called. Its hose equipment did not fit the Boonville water lines. One of the Boonville trucks had to be detached from the mill fire.

Fire Department Drivers Sign Conservation "Pledge"

More than 2,300 fire department drivers, mechanics and chiefs in 118 cities have signed the conservation "pledge", the Office of Defense Transportation reported recently.

The firemen are now pledged to abstain from truck driving which is liable to result in accidental damage, excessive tire wear, or gasoline waste, and to practice the best maintenance so as to avoid premature mechanical failures.

The pledge which they have signed is ODT's U. S. Truck Conservation Corps pledge.

Steps are now being taken to bring the story of preventive maintenance and the U. S. Truck Conservation Corps to the attention of the driver-firemen in the remaining 12,000 fire departments in the nation.

This is being done by mailing the official U. S. Truck Conservation Corps booklet, "America's Trucks . . . Keep 'em Rolling," to the chief of each of the fire departments with the request that the men be asked to join.

The booklet emphasizes the importance of regular inspections at intervals of 1,000, 5,000 and 15,000 miles as the basis of proper maintenance.

Snapped at the Maine Meeting

Left: Chief Harold E. Nickerson, Brunswick, Host to the Meeting; Ex-Chief Charles E. Fortin, Lewiston and Chief Giles F. Frost, Norway. Center: Theodore W. Gunn, Engineer New Hampshire Board of Underwriters and Consulting Engineer, First Service Command, Concord, N. H. Right: Chief Herbert Constantine, Bangor, First Vice President and R. C. Bicknell, Norway, Secretary of the Association.

Rescue Truck for Lewiston and Auburn

The two fire departments of Lewiston and Auburn, Maine, have adopted a new wartime emergency piece of apparatus, thanks to the Lewiston-Auburn Salvation Army under the direction of Adjutant J. Coleman Miller.

Started by a substantial check from the Auburn Firemen's Relief Association, quickly followed by a collection from the Lewiston firemen and augmented by local lodges and interested citizens, a G .M. C. Panel body truck was purchased, painted and lettered. Work of installing lights, siren and equipment was donated by members of both departments.

The unit is equipped with stretcher cot, mechanical splints, 24 unit American Red Cross first aid kit, blankets, heat stones, steel helmets, smoke masks, MSA foille burn kit, fire extinguisher, 50 pairs of mittens for the men to change to drys, 10-gallon hot coffee insulated tank, drinking cups, paper towels, etc.

The truck is housed in the Auburn Central Station and answers all second alarms in both cities and is subject to telephone calls by either of the two chiefs or responsible officers.

New Rescue Truck Which Serves Lewiston and Auburn, Me.

Boat Yard Burns

Fire on July 20 at the John P. Holter Boat Yard at Portland, Conn., on the Connecticut River, destroyed the yard together with its contents of nearly 100 fine pleasure craft and the owner's home. Fire officials said the loss was approximately $300,000.

It was the second time the Holter home was destroyed. In the hurricane of September, 1938, which swept the New England coastline, flames destroyed the home. It was since rebuilt.

The ban of sales of gasoline caused the big boat shed, one of the best known on the Connecticut River, to be filled with costly river craft which were not taken out on the river this year. One of the pleasure boats, owned by Louis Brooks of Chester, was valued at $50,000. Some of the other boats consumed by the flames were valued at $30,000, many were estimated to be worth $20,000 and other values ranged down to $1,000.

The battle against the raging waterfront flames, some of which leaped more than 100 feet in the air, was carried on during a heavy thunderstorm. Lightning flashed and thunder rumbled, but a heavy downpour aided firemen from several companies in their fight.

State Policeman Edward Jesmonth of the Westbrook barracks was killed enroute to the fire when his police car skidded into a tree at East Hampton. Two other state employes riding with Trooper Jesmonth, were injured in the crash.

The Portland Fire Company was aided in fighting the fire by Middletown and Gildersleeve Departments.

THOMAS F. MAGNER

Battery of Eight Streams Makes Quick Job of Warehouse Fire
A warehouse stocked with baskets made a hot fire for the New York Fire Department to handle recently. The blaze occurred at Murray and West Streets on June 6. Two alarms were sent in and the companies responding quickly brought the fire under control.

George Richardson on OCD Radio Program

George J. Richardson, Secretary-Treasurer of the International Association of Fire Fighters, appeared on a recent NBC program, "Labor for Victory," presented by the American Federation of Labor, along with James M. Landis, Director of Civilian Defense, and Maj. General U. S. Grant, 3rd, Chief of OCD's Protection Branch.

Mr. Richardson contrasted present civilian preparations against attack and the situation fourteen months before Pearl Harbor and nine months before creation by the President of the Office of Civilian Defense, when the AFL Fire Fighters Union first called for establishment in this country of organized civilian defense.

At that time, he said, a survey requested by the union in a letter to President Roosevelt disclosed that fire fighting equipment—the first line of civilian defense against air raids—was "shockingly inadequate and obsolete" in many important American cities.

Crediting OCD with helping to bring about vast improvement in the nation's fire fighting facilities, Mr. Richardson said that much of the success in community air raid and plant protection systems "is due largely to the fact that OCD had the wisdom to seek and encourage labor participation in its program."

Fire Truck Overturns

Two San Francisco firemen were seriously injured recently when Truck 1, answering an alarm at Third and Howard streets struck an oil slick while making the turn from Fifth Street into Howard and turned over, pinning the men beneath it.

Four other men on the truck were injured less seriously in the accident.

The tractor had negotiated the turn successfully but the tiller wheels, swinging wide, hit the oil, went into a skid that caused the turntable pin to shear off and the trailer part of the truck, snapped loose, turned over with a crash.

BOB GREENOCK.

Official U. S. Navy Photograph

Members of an anti-aircraft machine gun battery at battle stations after repelling a Japanese bomber attack on a U. S. Aircraft Carrier.

NATIONAL FOAM CONTINUOUS FOAM PRODUCTION SYSTEM

Fighting Fire with Foam

Fire's Out
Ready for Action!

The fire, caused by previous enemy attack, has been extinguished with foam — some is still visible on the deck, guns and even on the gunners' helmets — and the gun crew is ready for the enemy again.

Fighting the enemy effectively often depends on the efficiency of fighting fires caused by enemy action.

National Foams have been adopted by the U. S. Navy.

In Fire Department Service

National Foam System has equipment especially designed for the use of Fire Departments to meet all types of fire fighting requirments. Complete engineering service available.

Most oil refineries and many other important industries are protected by National Foams.

NATIONAL FOAM SYSTEM, INC.

Specializing in Foam Fire Protection

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CIRCUL-AIR THE AIR-CONDITIONING FIRE HOSE DRYER

Preferred by Fire Chiefs in Municipal, Industrial and Military Service

TYPICAL CIRCUL-AIR USERS

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CITIES—VILLAGES & TOWNSHIPS EVERYWHERE

Preferred because it—

- *Saves Hose*
- *Saves Drying Time*
- *Saves Floor Space*
- *Eliminates Towers*
- *Is Easier to Use*
- *Improves Building Design*
- *Reduces Hose Stretch*
- *Air-Conditions as it Dries*

THE CIRCUL-AIR CORPORATION 303 DWIGHT BUILDING JACKSON, MICHIGAN

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Oil Fire Being Investigated

Federal Bureau of Investigation agents began a probe of a fire which flashed through the Union Oil Company refinery at Oleum, California, on San Pablo Bay (north arm of San Francisco Bay) across Carquinez Strait from Mare Island Navy Yard.

The fire, accompanied by a series of explosions, did damage estimated unofficially as high as two million dollars although plant officials refused to make an estimate.

The fire started shortly after midnight on June 12, apparently in a two-story building which houses lubricating agitators. A plant worker said all men escaped from the building without injury.

Flames flashed through the upper story of the building, he said, and spread throughout the structure, igniting lubricating and stove oil which was being treated in the agitators. Flaming oil then flowed to other tanks, igniting them. It then spread to sealed tanks containing stove oil and there were several explosions when the stove oil vaporized and blew up.

Plant workmen said that the fire was kept away from gasoline tanks, stored within a hundred yards of the tanks and equipment which burned.

Nearby towns of Crockett and Rodeo sent fire fighting equipment and men to aid plant firemen on the land side. Two Coast Guard fireboats and fireboats from the Standard Oil and Associated Oil companies fought the flames from the water side. The flames shot more than 300 feet in the air and the fire could be seen for twenty miles.

The fire, brought under control after five hours, continued to burn the rest of the day in a big sump in the northwest section of the plant.

BOB GREENOCK.

OCD Expands Rescue Service

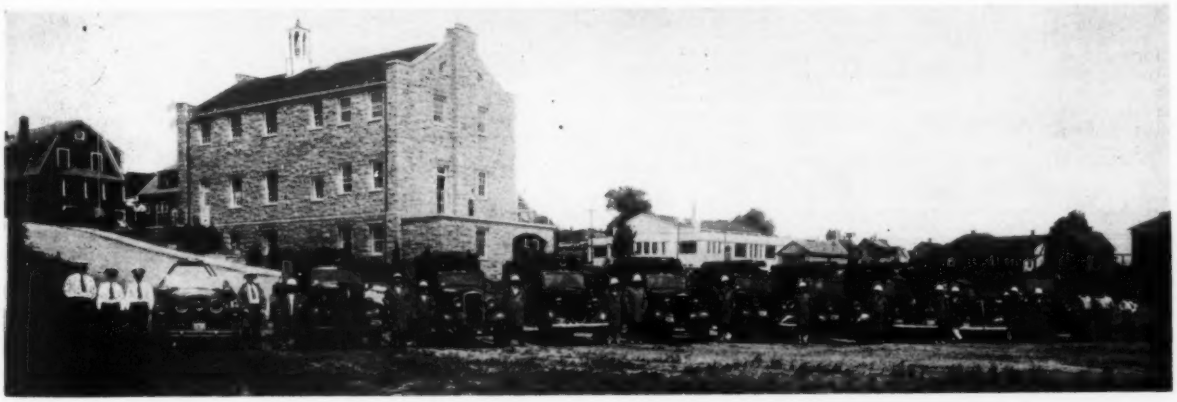
Simon H. Ash, Chief Engineer, Metal and Nonmetal Section, Mineral Production Security Division, U. S. Bureau of Mines, has been commissioned as Senior Engineer in the U. S. Public Health Service and assigned to the Medical Division of the Office of Civilian Defense as Chief of the Rescue Section, James M. Landis, Director of Civilian Defense, recently announced.

British experience with the newer "saturation" bombing has demonstrated the importance of this lifesaving service trained in techniques similar to those used in mine rescue work, especially, reconnaissance, tunneling, shoring and emergency field care of the injured, Mr. Landis stated. He points out that the rescue service of the local fire department is responsible for rescue work in burning buildings, but its personnel cannot be dispersed at the time of an air raid to incidents where fire fighting is not required and where prolonged and laborious work is required to extricate civilian casualties trapped under the debris of demolished buildings.

Although the Rescue Service has been organized as a special section of the Medical Division of the Office of Civilian Defense, the State and Local Rescue Services are independent services under their own chiefs. Operation in the local community will be independent of, but coordinated with the local Emergency Medical Service under the direction of the local Commander of the U. S. Citizens Defense Corps and the Control Center.

When an incident occurs, the medical adjutant at the Control Center will dispatch to the scene an express party consisting of one ambulance, one mobile medical team and one passenger car or station wagon. If trapped casualties are reported, a rescue team will also be ordered by the Chief of Rescue Service at the Control Center to move out as part of the express party. Coordination of the two services will make possible immediate clearance to hospitals of seriously injured casualties recovered from debris.

So-called "heavy rescue units" as a separate service are to be discontinued except as part of the demolition and repair services of local government departments or of private construction or demolition companies which can be called to assist the rescue units whenever heavy equipment is required.



OCD Apparatus Allocated to New London, Conn., Fire Department

The Federal Government has allotted eleven units for fire protection from bombings to the New London, Conn., Fire Department. These include five trailer pumps, four skid pumps and two front-end pumps. Second-hand 1½-ton trucks were purchased for the skid and front end pumps and 1-ton closed jobs for the trailer pumps. These were changed to bodies of the department's own design, painted, lettered and equipped. On July 11 the last one was completed. At the top can be seen ten of the units put into service. At the bottom, left, is one of the trailer pumps and at the right one of the skid pumps mounted. Chief Thomas H. Shipman heads up the New London Fire Department.

Gasoline Supplies Restored to Nassau County Fire Units

The Federal Office of Defense Transportation has restored all gasoline cuts applied to Nassau County's sixty-eight volunteer fire departments. The cuts, reported to total fifty-six per cent, were restored after complaints had been filed with the ODT by Fire Marshal George Clough and John F. Deming, county administrator of war transportation, a representative of the State Office of War Transportation.

Mr. Clough disclosed that the ODT had promised to use a simplified form in rationing gasoline to fire departments in the future. He also said he expected the ODT to eliminate requiring certificates of necessity for each of the county's 372 fire trucks.

Captain Lee Heads Up Belair Shipyard Fire Department

Captain Michael Lee, for thirty years with the San Francisco Fire Department, is head of the fire fighting forces at the Belair Shipyard where large concrete barges are being constructed for the United States Maritime Commission, by Barrett and Hilp, general contractors.

Acting for the San Francisco Fire Department, Fire Chief A. J. Welte of South San Francisco, presented a beautiful gold badge to Captain Lee as a token of the respect in which he is held by the smoke eaters.

Lieutenant Moe B. Shulman, another former San Francisco fireman, is second to Lee at Belair and their force includes a number of regular firemen, as well as roving firemen patrolling the hulls of the unusual ships.

Raymond Anderson, resident plant engineer for the U. S. Maritime Commission, at Belair, participated in the presentation ceremony and General Superintendent George McKeever, headed a large crowd of employees who wished Lee well.

Captain Lee Receives a Gold Badge from His Colleagues
Left to right are Captain Lee, Fire Chief A. J. Welte of South San Francisco and Raymond Anderson of the U. S. Maritime Commission.

Homemade Fire Truck

When new apparatus could not be obtained by the time it was needed, the maintenance and engineering department of General Electric's Lynn River Works decided to build their own. The fire fighter was a 1938 model 1½-ton truck before it was made over for its more glamorous duty. Streamlining was accomplished with sheet steel.

The outfit will pump 1,200 gallons of water per minute, which is greater than any anticipated need. To make this possible, a centrifugal pump of large capacity was connected to a used eight-cylinder, 95-hp automobile engine, making the pump independent of the truck's motive power. One outlet of the pump ends in a turret nozzle, two outlets provide for standard hose connections, and a fourth can be directed through a foam generator for fighting oil blazes. Pressure gauges for control are mounted on the instrument panel of the pump motor.

The truck is for the use of the plant's own fire department, which is on duty twenty-four hours a day.

General Electric's New Fire Engine

Fairfield Chiefs Elect Officers

At the annual meeting of the Fairfield County Fire Chief's Emergency Plan, held in Wilton, Conn., on May 26, the following officers were elected: President, Chief Frank Cramer, Shelton, Conn.; First Vice-President, Chief Joseph Sanger, Old Greenwich; Second Vice-President, Chief Albert Berger, Georgetown; Secretary, Chief John Moehring, Belltown, Stamford; Treasurer, Commissioner George Brencher, Darien; Trustees for two years, Chief Carl Peterson, Trumbull; Chief William Hearing, Glenbrook; Chief Charles Volk, Norwalk; Granville Stubbs, New Fairfield. Trustees for one year include Chief Stuart Potter, Greenwich; Chief Thomas Carroll, Fairfield; Chief William Sturgis, Ridgefield, and Chief John Disbrow, Wilton.

One for Our Readers

One of our readers has written for information on the Lowry fire hydrants. He has a few of them in his city and wishes to purchase repair parts for the same. It is believed that the Lowry hydrant is no longer produced under that name. Any information on where parts may be purchased will be appreciated by the Editor.

MIDWESTERN COAT

Service Weight . . . Standard in Many Cities

This Midwestern garment is designed particularly for complete comfort where a service weight garment is preferred. It is used exclusively by many large city departments, and it is also a favorite among volunteer fire departments.

It is designed and constructed throughout so as to give complete comfort and sturdy service. This is one of many Midwestern garments. Write for literature for complete line, which includes coats and bunker pants suits.

IN CITIES

and in a thousand unusual places . . . wherever the sinews of war are being made or used, such as

FIRES ARE FOUGHT

by men wearing

Your job of saving life and property is certainly essential, and it can't be done in ordinary civilian type clothing. The job is too tough. You need rugged special-built Midwestern professional type clothing . . . the same garments now in heavy service all over the world. Most of Midwestern's catalog items can be shipped with little or no delay, for production has been stepped up sharply in our plant near Peoria, but it is advisable to order as early as possible.

MIDWESTERN

PROTECTIVE CLOTHING

MIDWESTERN MANUFACTURING CO.
MACKINAW, ILLINOIS

See your local Midwestern Distributor for prices and literature, or write the factory.

BUY WAR BONDS
The World's Best Investment

Your Bond Selling Responsibilities Double!

Starting September 9th, your Government will conduct the greatest drive for dollars from individuals in the history of the world—the 3rd War Loan.

This money, to finance the invasion phase of the war, must come in large part from individuals on payrolls.

Right here's where YOUR bond selling responsibilities DOUBLE!

For this extra money must be raised *in addition* to keeping the already established Pay Roll Allotment Plan steadily climbing. At the same time, every individual on Pay Roll Allotment must be urged to dig deep into his pocket to buy *extra* bonds, in order to play his full part in the 3rd War Loan.

Your now *doubled duties* call for these two steps:

1. If you are in charge of your Pay Roll Plan, check up on it at once—or see that whoever is in charge, does so. See that it is hitting on all cylinders—*and keep it climbing!* Sharply increased Pay Roll percentages are the best warranty of sufficient post war purchasing power to keep the nation's plants (*and yours*) busy.

2. In the 3rd War Loan, every individual on the Pay Roll Plan will be asked to put an *extra two weeks salary* into War Bonds—over and above his regular allotment. Appoint yourself as one of the salesmen—and see that this sales force has every opportunity to do a real selling job. The sale of these *extra* bonds cuts the inflationary gap and builds added post-war purchasing power.

Financing this war is a tremendous task—but 130,000,000 Americans are going to see it through 100%! This is their own best *individual* opportunity to share in winning the war. The more frequently and more intelligently this sales story is told, the better the average citizen can be made to understand the wisdom of turning every available loose dollar into the finest and safest investment in the world—United States War Bonds.

★ ★ ★

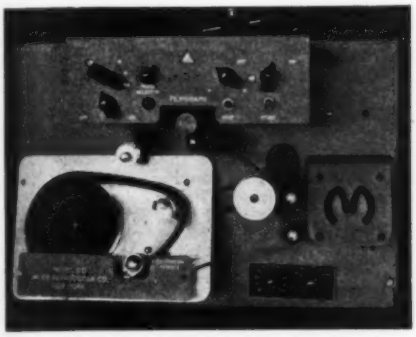
BACK THE ATTACK With War Bonds!

This space is a contribution to victory today and sound business tomorrow by FIRE ENGINEERING

Manufacturers' Announcements

Sound Device for Recording Alarms

The Filmgraph, manufactured by Miles Reproducer Company, 812 Broadway, New York, N. Y., a sound device for recording and reproducing sound on film instantaneously and at low cost, has a wide variety of uses in many specialized fields and might readily be applied to the receiving of telephoned fire alarms.



Front Panel with Operating Controls of Filmgraph

It can be continuously played back up to eleven hours. The machine employs an endless loop of film which is placed in the magazine. The recording time depends upon the length of the loop used and loops can be supplied for fifteen minutes, one hour, two hours, five hours and up to eleven hours. The loop moves forward continuously through the machine, no rewinding of the film being necessary or possible, and if the recording started on track number one, it moves over to track number two automatically at the end of recording on track number one and this automatic movement continues until fifty tracks are indented across the width of the film. Each track is indicated on a dial, and this number changes as the stylus moves from one track to the other. Any track may be played back at any time by manually moving the stylus by a control knob to the desired number. Means are provided to instantly start and stop the recording or play-back on a single word or syllable. A three position control sets the machine for recording, play-back or public address.

Pamphlet Issued

Walter Kidde & Company, makers of fire extinguishing apparatus and systems, have issued an illustrated sixteen-page manual entitled "How to Teach Fire Fighting," which is designed to aid factory executives in instructing employes in fire extinguishing technique. It describes the classification of various types of fires, the kind of extinguisher best suited to each, and the methods of setting up demonstrations in order to teach the proper use of each type of extinguisher.

"How to Teach Fire Fighting" is offered without cost to any plant requesting it from Walter Kidde & Company, Inc., 140 Cedar Street, New York 6, New York.

Tamperproof Fire Extinguisher Case

To reveal any attempt to tamper with fire extinguishers, American-LaFrance-Foamite Corporation, Elmira, N. Y., have introduced a new inexpensive extinguisher container known as the Tampless Case.

Constructed of non-critical, tough cardboard stock, it safely houses the extinguisher from the reach of unauthorized persons, and yet allows of instant removal for legitimate use. One quick pull on a sealed string breaks through a gummed insignia paper sealing strip and permits the Tampless Case to completely unfold. The extinguisher can immediately be lifted from its bracket.

The Tampless Case can be reused. Simply reservice extinguisher, replace, fold case and reseal with special insignia tape.

A unique feature of the Tampless Case makes available important fire fighting instructions at the actual location of each extinguisher. Precise information on the front of the case shows the classes of fire on which extinguishers should be used, and the kinds of fires on which they should not be used.

Coast Guard Fire Fighters

The Hanley Engineering Service of Prospect, Ohio, has completed a contract for over 100 Centridrive fire tugs for the United States Coast Guard. These vessels are powered with four 115 H.P. motors which drive directly four special deluge centrifugal pumps, each having a capacity of over 800 gallons. These pumps serve the dual purpose of propelling the boat and serving as stress throwing agents.

The pumps, the product and design of the Hanley Engineering Service, are of a special nature, built to perform the dual roles and are of all bronze construction of rugged design. These tugs offer a sharp contrast to the older types of fire tugs, particularly in their greater discharge per unit of weight.

They offer waterfront protection for cities and towns on shallow or deep water and are priced within the means of an ordinary city budget.

Mr. Hanley recently expressed the belief that the average city with waterfront fire problems will soon consider the purchase of a tug of this type in the same manner that it would purchase an additional fire engine.

He states that the Centridrive fire tugs will be available after the war, powered with the concern's own 16-cylinder 200 H.P. V-type engines.

The Centridrive principle was first demonstrated publicly in 1937 when Mr. Hanley dispatched an experimental fire boat to aid the City of Cincinnati in the great flood of that year. Later the City of Wheeling purchased the first Centridrive fire tug, which unit has been in service since. The City of Marietta also purchased a smaller boat about the same time. All these units were prototypes of the standard Centridrive fire tug of today.

Protexall Gas Mask Announced

The American-LaFrance - Foamite Corporation of Elmira, N. Y., announces a new all-protection gas mask, known as the "Protexall." It prevents inhalation of toxic gases, fumes and toxic smoke. It has the approval of the U. S. Bureau of Mines for respiratory protection against acid gases, organic vapors, ammonia, carbon monoxide and toxic smoke where there is sufficient oxygen present to support life.

The cannister is designed to give a minimum of resistance to breathing. Contents include a specially prepared catalyst which converts carbon monoxide to harmless carbon dioxide.

(*Continued on page* 534)

Hanley Centridrive Fire Tug Discharging Over 3,000 Gallons per Minute

FALSE ALARMS

"My Good Man, Have You Ever Considered Changing Your Job?"

Scotch Mosquitoes

A backwoods mountaineer found a mirror which a tourist had lost.

"Well, if it ain't my old dad," he said as he looked in the mirror. "I never knowed he had his pitcher took."

He took it home. That night while he slept, his wife found the mirror.

"Hah," she said, looking into it, "so that's the old hag he's been chasin' lately!"

The officer of the day stopped a mess orderly as he was carrying a soup kettle out of the kitchen.

"Here you," he snapped, "give me a taste of that!"

Obediently he was handed a ladle, and he tasted it.

"Great Scott! Do you call that stuff soup?" he roared.

"No, sir," replied the orderly meekly, "that's dishwater."

Clerk to boss by telephone: "Listen, Chief, I won't be able to motor back until Thursday."

"So you want a few more days of grace, eh?"

"No, sir—of Helen."

The young negro recruit was the victim of so many practical jokes that he doubted all men and their motives. One night while he was on guard, the figure of one of the officers loomed up in the darkness.

"Who goes dere?" he challenged.

"Major Moses," replied the officer.

The young negro scented a joke.

"Glad to meet yuh, Moses," he said cheerfully. "Advance and give de ten commandments."

A young married woman one morning gave her husband a sealed letter, which he was to read when he got to the office. He did so, and the letter ran as follows:

"I am obliged to tell you something that may give you pain, but there is no help for it. You shall know everything, whatever be the consequences. For the last week I have felt that it must come to this, but I have waited until the last extremity, and can remain silent no longer."

Cold perspiration stood in thick drops on the brow of the husband, who was prepared for the worst. Tremblingly he read on:

"Our coal is all gone. Please order a ton to be sent this afternoon. I thought you might forget it for the tenth time, and therefore wrote you this letter." (*P.S. He didn't!*)

The other day an old man who had lived all his life in one house puzzled his friends by moving next door. They asked him why he'd bothered.

"Eh," he told them, "Aw reckon it's t' gipsy in me."

Mother wanted to spend Saturday in town, and father, an accountant, reluctantly agreed to give up his golf and spend the afternoon with the children. On the return of mother, the father handed her the following report of the afternoon:

"Dried tears—nine times. Tied shoes—13 times. Toy balloons purchased—three per child. Average life of a balloon—13 seconds. Cautioned children not to cross street—21 times. Number of Saturdays I will do this again—0."

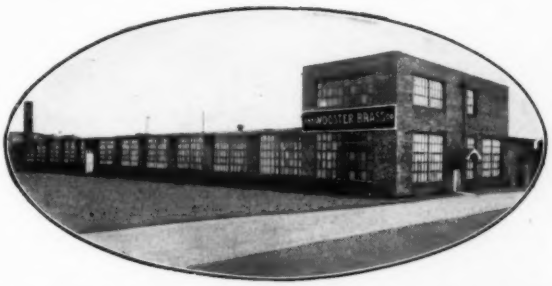
New Vicar: "Are people subject to colds in this part? Quite a lot of people had coughs during my sermon."

Old Verger: "Coughs, sir—them ain't coughs, them's time signals."

"I Couldn't Hear a Thing with the Water Running!"

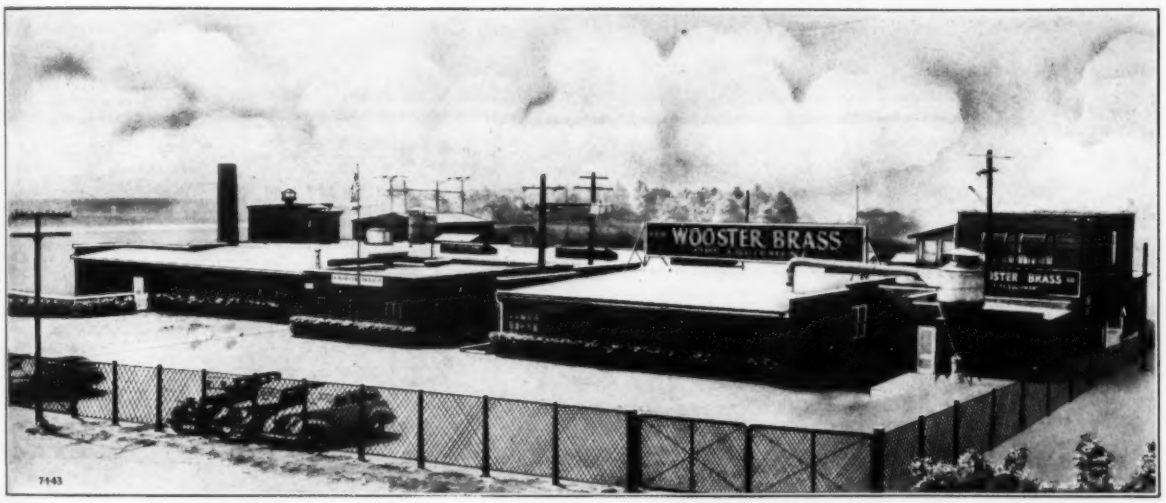
There is NO PRIORITY on EFFICIENCY!

ORIGINAL PLANT



PLANT TODAY

THERE MUST BE A GOOD REASON FOR THIS UNUSUAL GROWTH



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WOOSTER, OHIO

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WHEN YOU SPECIFY PRODUCTS CARRYING THE "TRUMPET" TRADE-MARK YOU CAN BE SURE YOU HAVE THE LATEST AND BEST IN ENGINEERING DESIGN FROM MEN WITH OVER 30 YEARS OF PRACTICAL EXPERIENCE, WHO KNOW HOW.

SOME WOOSTER PRODUCTS

GUARD LUGS COUPLINGS
SKI LUGS COUPLINGS
FIRE MIST NOZZLES
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EXPANSION RINGS
STRAINERS
REDUCERS
ASSEMBLIES
VALVES
FITTINGS
SIAMESE
HOSE GASKETS
MENDING SLEEVES
BUSHINGS
NIPPLES
ETC.

And such equipment is bound to improve the efficiency of your department and afford greater protection for your men. WOOSTER BRASS PRODUCTS are well known and relied on by fire departments everywhere, but we are constantly improving these old standbys and adding new units to the family.

In the interest of the war effort WOOSTER BRASS COMPANY has expanded its facilities over 800%. This expansion in equipment and experience will enable us to greatly increase the efficiency of our post-war products to a point never attained before.

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THE WOOSTER BRASS CO.

FIRE EQUIPMENT OF DISTINCTION

WOOSTER, OHIO ● **J. C. SCHELLIN, PRES.**

A NEW HELMET

ALL-LEATHER
STEEL-REINFORCED

No. 550—With Drop Brim

No. 650—With Regulation Brim

AT A **NEW LOW PRICE**

BY **CAIRNS** OF COURSE

It's the CAIRNS SEAMLESS CROWN HELMET in which the crown is formed from a SINGLE PIECE OF HEAVY TOP-GRAIN LEATHER —hardened and toughened by the special CAIRNS process, and reinforced by sewed-on leather-covered steel ribs (see cut). The materials and workmanship are of the usual CAIRNS QUALITY, recognized as standard among fire departments for over 100 years.

Steel Reinforced Rib—Actual Size

The fittings include the CAIRNS CUSHION LINING, shock-proof and demountable (with earlaps if desired), and front piece lettered to suit within the space available. Three head shapes — regular, round, and long—are offered, in all sizes up to 8. The regulation style conforms with all usual department requirements. The drop brim style has a special interest for auxiliary firemen. Write for prices and more detailed description. Prompt deliveries can be made.

Cairns Cushion Lining

Let us supply all your department or personal needs;—loose-leaf fire record books, department record forms; turnout clothing, shirts, caps, belts, badges, etc.

Catalog 31A gives details

CAIRNS & BROTHER

Outfitters to Firemen Since 1836

444 LAFAYETTE STREET - NEW YORK

WHAT'S BURNING?

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of July, 1943. These figures, compiled from the telegraphic reports, are based on estimates made at the time and are subject to later investigation and subsequent revision. Taken as a whole, however, they are approximately correct view of the losses incurred. The figures represent losses in thousands of dollars.

Month Ending July 31	Losses in Thousands of Dollars
Los Angeles, Cal.—Taylor Milling Co. feed mill damaged	50
Vancouver, B. C.—Storage bldg. of O'Neil Co., Ltd., damaged	50
Concord, N. H.—Six-story grain elevator, milling equipment, storage bldgs. and huge supplies of grain at G. N. Bartemus Co.'s plant destroyed	50
Hudson, N. Y.—Five hundred foot long brooder house on the Howard Fingar Farm in Newton Hook, destroyed	50
Galion, Ohio—Addition to plant of Perfection Steel Body Co. damaged	80
Corvallis, Ore.—Plant of Fischer Mill & Warehouse Co. damaged	50
Bristol, Pa.—Plant of Rohm & Hass Chemical Co. damaged	50
Somerville, Mass.—Five houses and a former barrel factory destroyed	50
Zeeland, Mich.—Feed mill containing several thousands bushels of grain destroyed	65
Exeter, N. H.—Burlingame block in downtown area damaged	50
Hertford, N. C.—Dept. store of J. C. Blanchard & Co. destroyed	50
Sharon, Pa.—Two-story cement block warehouse housing Robin Furniture Co., the Sharon Store and dwelling damaged	170
Green Bay, Wis.—Two warehouses used as storage places by the Wisconsin Wholesalers, Stokely Bros. Co. and the Central Wire Co. destroyed	80
Rittenhouse, Ariz.—Ellsworth Bros. general merchandise store destroyed	50
Mendon, Mich.—Little Bros. elevator and feed mill destroyed	50
Loch Sheldrake, N. Y.—Victoria Mansion, 85-room resort hotel destroyed	50
Phoenix, Ariz.—Produce Packing Shed of the Miller-Johns Co. at suburban Alhambra destroyed	60
Louisburg, N. C.—Eight business houses and old Opera House damaged	60
Chicago, Ill.—Bldg. occupied by H. Piehl Transfer Co., W. S. Snow lighting fixtures Co. and Joseph Ott Model Airplane Co. destroyed	125
Toronto, Ont.—Mill of Hoyle Gold Mines near Timmins, Ont., destroyed	160
Atlanta, Ga.—Two story brick bldg. and stock and equip. of Dolly Dimples Laboratories, Inc., destroyed	50
Sterling, Ill.—Sterling theatre destroyed	75
Dallas, Ore.—Fern sawmill destroyed	50
McKeesport, Pa.—G. C. Murphy Co. store destroyed	125
Atlanta, Ida.—Commercial and residential sections destroyed	125
Myrtle Creek, Ore.—Office of R. A. Briggs Logging Co., Myrtle Theatre and post office destroyed	60
Hanford, Cal.—The Kings-Tulare Tallow works plant destroyed	50
Marysville, Mich.—Dow Magnesium Corp. damaged	425
Fort Payne, Ala.—The Geraldine consolidated high and grammar school destroyed	130
Kellogg, Ida.—Little Pittsburgh Mine Surface plant destroyed	125
Rockport, Ind.—The Grandview school and gymnasium destroyed	50
Birmingham, Mich.—Main bldg. of Sherwood school, Bloomfield Hills, destroyed	125
Mt. Pleasant, Mich.—Refinery of Roosevelt Oil Co., 23 tanks containing 200,000 gallons of gasoline, fuel oil, kerosene, naphtha and rubber solvent, four major bldgs. and several smaller ones destroyed	80
Pontiac, Mich.—Eight buses and garage owned by Pontiac City Lines, Inc., destroyed	125
Westfield, N. J.—Forty freight cars of New York, Chicago & St. Louis Railroad Co. destroyed	50
Providence, R. I.—Robinson furniture store and warehouse destroyed	125
Oshkosh, Wis.—Oshkosh Wood Products Corporation destroyed	125

CLASSIFIED ADVERTISING

Bids Wanted, For Sale and Help Wanted $5 per inch. Position Wanted, $2.50 per inch

WANTED

Jobbers to sell Morning Pride Firecoats, with Wing Freedom Sleeves, Chest Protector, Wool Wristlets, Synthetic Rubber. Write Morning Pride Mfg. Co., 1986 Home Ave., Dayton, Ohio.

FIRE PROTECTION ENGINEER AND INSPECTOR

Permanent positions open in East, South or Middle West, with large industrial fire insurance organization. Previous knowledge in this work not necessary. Applicant must be a technical graduate with manufacturing or engineering experience, and possess a good personality. Send photo with letter. Men subject to draft for military service cannot be considered. B. F. Kraus, Director of Inspections, Associated Factory Mutual Fire Insurance Companies, Inspection Department, 184 High St., Boston, Mass.

Nashville, Tenn.—Machine shop, foundry bldg. and tools of Jake's Foundry Co. destroyed; incoming freight depot of Louisville & Nashville R.R. destroyed..... 215

Damariscotta, Me.—Six bldgs. in the Lincoln County Village house a detachment of coast guards and a Baptist church destroyed 80

Peabody, Mass.—The Wagon Wheels Inn destroyed 50

Astoria, Ore.—Laraca lodging house and eight homes destroyed..... 80

Ridgefield, Wash.—Bratlie Bros. lumber mill destroyed 125

Kenosha, Wis.—Bldg. housing Veenstra Lumber & Supply Co. and furniture stored by Barr Furniture Mart destroyed 175

Montreal, Que.—Arlington Cycle & Sports, Ltd., damaged 80

Bay City, Mich.—Garage of Balder Bros. Motor Coach Co. and twelve busses destroyed 65

Mowich, Ore.—Deschutes Planing Mill and Lumber shed destroyed..... 50

Fort Smith, Ark.—Block long Geren bldg. destroyed 215

Los Angeles, Cal.—Three-story bldg. housing West Co., makers apparel; Felt Novelty Co. and Hardwick Magee, carpet manufacturers, damaged..... 60

Southgate, Cal.—Plant of Southwest Supply Co. damaged 50

Chicago, Ill.—J. C. Nielson Co. destroyed.. 50

Richmond, Ind.—Converto Mfg. Co. plant damaged 55

Lakeview, Ore.—Lakeview Lumber & Planing Mill destroyed..... 80

LaCrosse, Wis.—Warehouse and large quantities of tobacco owned by Scotten-Dillon Tobacco Co. destroyed..... 250

Pocohontas, Ark.—The Belford and Roe wholesale gasoline station at Reyno destroyed 60

Chicago, Ill.—Frame factory bldg. occupied by D. A. Matot Co. and Charles Stetcher Co. destroyed 115

Minneapolis, Minn.—Garage of Wolk Transfer Co., housing automobiles and trucks damaged 170

Chicago, Ill.—Norris Grain Co.'s Midwest Elevators, 40 silos destroyed..... 550

Bridgeville, Pa.—Warehouse destroyed.... 50

Philadelphia, Pa.—Storage bldg. of the Kinsey Distilling Co. destroyed..... 60

Maspeth, N. Y.—Welbilt Stove Co. damaged 80

Bingen, Wash.—Nordby Lumber Box Co. destroyed 50

Davenport, Ia.—Malt house at the Zoller Brewing Co. damaged..... 50

Deasy Made Deputy Chief

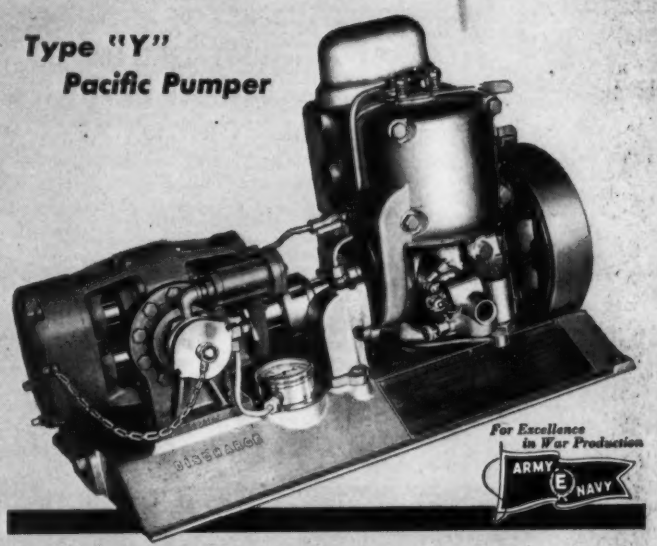
Among the deputy chiefs recently appointed by Mayor LaGuardia of New York City was Battalion Chief Daniel A. Deasy who was one of the officers sent abroad to study fire fighting conditions in England about two years ago.

MOST POWERFUL PORTABLE PUMPER

for its Weight and Size

EVER BUILT!

Type "Y" Pacific Pumper



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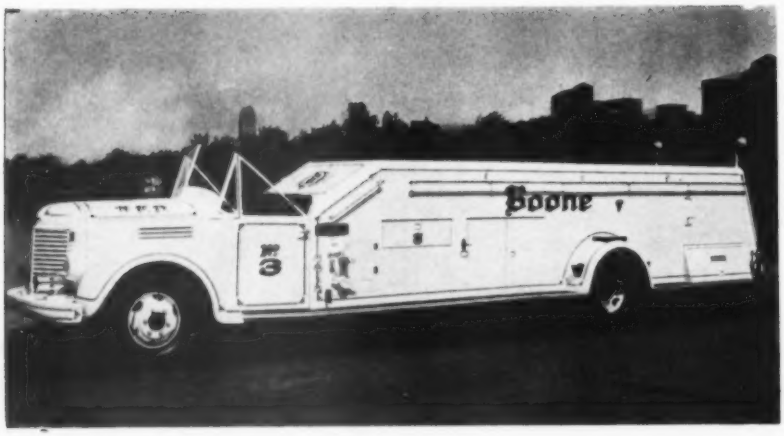
Free! JUST OFF THE PRESS—The third edition of our original, "FIGHT FIRE WITH WATER", has been completely revised. It is now more than a booklet—it is "A Manual". Write today for your free copy.

FIRE FIGHTING EQUIPMENT DIVISION

PACIFIC MARINE SUPPLY COMPANY

SEATTLE, WASHINGTON



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MANUFACTURERS OF CUSTOM BUILT FIRE APPARATUS FROM 100 G.P.M. TO 1200 G.P.M. CAPACITY WITH EITHER CENTRIFUGAL OR ROTARY PUMPS

★ *"Everything for Fire Fighting"* ★

CENTRAL FIRE TRUCK CORP.

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See Page 426

We Can Supply Any

BOOKS

on any phase of

FIRE FIGHTING OR FIRE PREVENTION

at publishers' regular list prices.

CASE-SHEPPERD-MANN PUBLISHING CORP.

24 WEST 40TH STREET NEW YORK 18, N. Y.

See Page 426

Firemen Drive Taxis to Fires

In Portland, Maine, twenty-five firemen have been permitted by the city to work as taxi drivers in their time off. The city manager said that "a fireman driving a cab when an alarm sounded would be likely to reach the scene a lot quicker than if he were at home." The taxi companies permit firemen to use their cabs in answering fire alarms.

Reprinted from "Public Management," May, 1943.

Dominion Chiefs to Meet

The 1943 annual meeting of the Dominion Association of Fire Chiefs will be held at St. Catharines, Ontario, from August 24 to 27. An outstanding list of speakers is expected to draw a very large attendance of fire chiefs not only from Ontario but from the other provinces of the Dominion.

Convention headquarters are in the Hotel Leonard, and reservations should be made through Chief L. A. Burch of St. Catherines.

The detailed program follows:

Tuesday, August 24

9.30 a.m.—Registration.

10.00 a.m.—Opening Ceremonies
Invocation
Civic Welcome
Response to Welcome
President's Address by Fire Chief A. E. Woods.
Reading of Obituaries and Memorial Address.
Appointment of Committees.

2.00 p.m.—"W.P.T.B. Restrictions on Fire Equipment" by Mr. R. C. Mold, Director of Fire Protective Equipment Division, Wartime Prices and Trade Board.

2.45 p.m.—"To-day's Problems of Firemen" by D. H. Lamb, Secretary-Treasurer, Provincial Federation of Ontario Fire Fighters.

3.30 p.m.—Demonstrations of Fire Fighting and A. R. P. equipment.

Wednesday, August 25

10.00 a.m.—Fire Marshals Forum
Fire Marshal Arnold C. Renner of the State of Michigan, U. S. A.
Dominion Fire Commissioner W. L. Clairmont.
Deputy Fire Commissioner F. X. Ahern, Quebec.
Fire Marshal W. J. Scott, Ontario.

2.00 p.m.—"Co-ordinating Fire Departments in the United States" by Mr. Roi B. Woolley, Office of Civilian Defense, Washington, D. C.
"Activities of Canadian Overseas Fire Fighters" by Major General The Hon. L. R. LaFleche.
"Civilian Defence in the Province of Quebec" by Mr. Marcel Gaboury, K. C., Montreal, Director of Quebec Civilian Protection Committee.
"Firemen's Training Schools" by C. W. Caskey, Ontario Deputy Fire Marshal.

6.30 p.m.—Annual Banquet—
Guest Speaker—Mr. Roi B. Woolley, Director of Mutual Aid Programs, Office of Civilian Defense, Washington, D. C., "Mutual Aid in War and Peace."

Thursday, August 26

10.00 a.m.—Reports of Delegates:
International Association of Fire Chiefs by Chief James Armstrong, Kingston.
Association of Canadian Fire Marshals and Dominion Fire Prevention Association by Chief A. E. Woods of York Twp.
Temiskaming & Northern Ontario Firemen's Association and the District of Cochrane Firemen's Association by Chief A. E. Woods, York Township, Ont.
Maritimes Fire Chiefs Association by Chief R. Beaulieu, Quebec City.
Province of Quebec, Police and Fire Chiefs Assn., by Capt. J. J. O'Kelly, Ottawa.
11.00 a.m.—"Protecting War Industries" by Col. Carl G. Richmond, Chief of Plant Protection Division, U. S. Army, Washington, D. C.
"Sprinkler Systems" by Mr. W. Hutton, C. U. A., Toronto.
"Fire Inspections" by Lieut. Nelson C. Rathbun, Brantford Fire Department.
2.00 p.m.—Outing to peach farm.

Friday, August 27

10.00 a.m.—Reports of Committees.
Discussions.
Election of Officers.
Selection of 1944 Convention City.

National Board Issues Revised Building Code

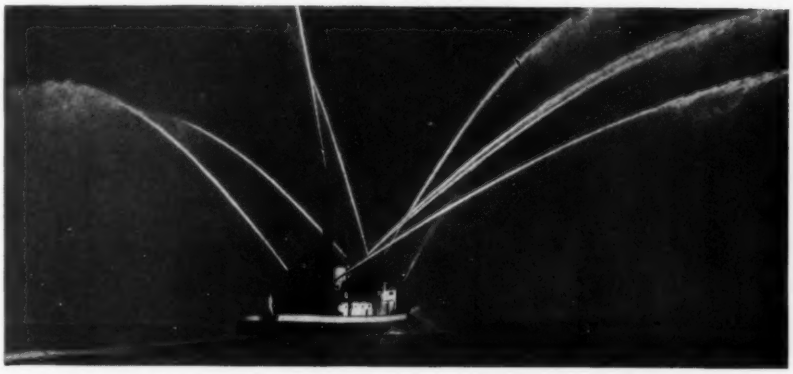
The Recommended Building Code of the National Board of Fire Underwriters, which serves as a model for building regulations in many cities throughout the country, has been revised to conform to advances in knowledge and experience which have resulted from new methods and materials, and to suggest means of protection required by new hazards.

An outstanding addition to this 1943 Recommended Building Code is an appendix in which the fire resistance rating, in hours of duration, is given for different forms of construction. This appendix covers walls and partitions, columns, beams, girders, trusses, and floor and roof construction. It was completed after months of study of all available data on tests made in this country and in England. These results were analyzed so that the ratings given would be on a comparable and equitable basis.

Another appendix applies to modern ideas in the erection and protection of piers and wharves.

Still another appendix deals with proper design in areas where earthquakes may occur.

Specify **INVINCIBLE NOZZLES**



"Fire-Fighter"—New York's $1,000,000 *Fire Boat equipped with nine Invincible Nozzles*

Insist on the Best!

Experienced fire chiefs know the merit of the Invincible Nozzle.

The original Invincible Nozzle was first manufactured in 1837, and has been constantly improved. Today it is the finest and best made of any.

Every genuine Invincible Nozzle is a tailored, machined job, made from the best materials, and tested at working pressures, before leaving our shops.

The next time you specify a nozzle, insist on getting the best; specify the Original Invincible Nozzle, made only by F. N. McIntire Brass Works.

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- PORTABLE, TOWER AND LADDER PIPE NOZZLES
- ROOF, SMOKE STACK AND CELLAR NOZZLES
- MORSE SHUT-OFF NOZZLES AND PLAY-PIPES
- SIAMESE CONNECTIONS AND HYDRANT GATES
- McINTIRE AUTOMATIC SHUTTER AND SLIDING POLE
- THE LOG PILE NOZZLE — THE "FREEMAN" DELUGE SET

★

Fig. 403

F. N. McINTIRE BRASS WORKS

Successors to A. J. Morse & Sons

BOSTON MASS.

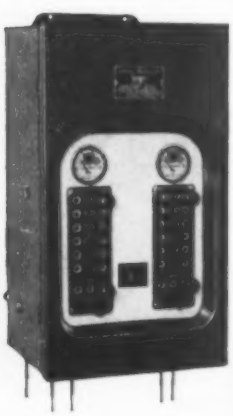
CALLING ALL CHIEFS!

Much as we would like to furnish you with all our products as we formerly did, it is just naturally impossible to do this during these war times. Our first duty MUST be to the Army, Navy and Maritime Commission for whom we are making all kinds of equipment.

When victory comes—and it's on the way—we will again be at **your** service—all the time.

BUCKEYE IRON & BRASS WORKS
DAYTON, OHIO

BUCKEYE
Fire Department Accessories



A versatile
BATTERY CHARGER

This Full-wave Tungar is a truly versatile battery charger. At 2 to 6 amperes it will handle twenty-four 6-volt batteries, or twelve 12-volt batteries, or six 24-volt batteries. At 2 to 12 amperes it will handle twelve 6-volt batteries, or six 12-volt batteries or three 24-volt batteries. It is a strong, toughly built unit designed for fast, one-day service. It will give a fast or slow charging rate or a combination of both. And it's economical, highly efficient and very easy to operate. Address inquiries to Section A833-58, Appliance and Merchandise Department, General Electric Co., Bridgeport, Conn.

GENERAL ELECTRIC

WAR FARE

Alarms and Discussions Clipped and Culled from the War News of the Day, of Interest to the Fire Service.

Firemen Take Off-Time Jobs

Reports from the Pacific Coast indicate that a large percent of the members of paid fire departments in Coast cities are working for other employers on their off-shift hours.

It is said that almost half of the members of the Los Angeles Fire Department—658 of them according to Chief John H. Alderson, are at work on war jobs, during off-shift hours. Contrary to the opinions of some civic authorities and fire chiefs, Chief Alderson believes in the practice. He is quoted as saying *"Fat firemen doing the additional work have become lean and that makes them better firemen."* Other officials in cities where firemen work in three shifts admit that the practice of the firemen devoting one of their shift periods to war work can hardly be stopped. As one chief has said: *"We do not relish the idea but if it means that we can hold our men who otherwise would be lost to us, then we will have to accept the practice."*

One of the problems growing out of this procedure is that of calling in the off-shift men in the event of emergency. In some cases efforts have been made to arrange with the plants or yards in which the men work to release them upon call. In others, however, their job locations are so far from fire houses that, particularly at night or during swing-shift changes, it is practically impossible for off-shift firemen to report for fire duty in any reasonable time.

The entire problem is receiving the thought and study of the International Association of Fire Chiefs, the Fire Defense Section of the United States Office of Civilian Defense and other bodies.

* * *

Victory Gardeners

Firehouses the nation over are blooming with Victory Gardens these days. Out in Denver, the city's firefighters admit that Victory gardening is strenuous, but they say there's hardly a weed now in the vacant lots to which they made hundreds of grass-fire runs in past summers. These vacant lots, now turned into Victory Gardens, have and will cut down the number of grass fires, with attendant responses. In many cities the Brothers are working like mad with hoe, fork, shovel and gardening tools on their off-tour periods, in community and private gardens. One chief said, apropos of this: *"Looks like this is a good thing. It's keeping the lads in trim for work with claw tool, axe and departmental tools in connection with their regular jobs."*

* * *

Aftermath of Munitions Ship Fire

While plans are afoot to decorate the 28 officers and men of the two New York City fireboats who, under command of Acting Deputy Chief John J. Hurton, won a hard fight against death, and destruction not only to themselves but to the waterfronts of New York City and parts of New Jersey, officials of the Cities at risk from the fire have registered their apprehension over such situations, and their desire to have the

war and navy departments act to prevent repetition of such near-catastrophies. Thus, from Jersey City, Mayor Frank Hague has telegraphed Washington asking the War and Navy Departments to take action. The telegram said that the situation was such that if the ship had exploded *"the danger to life and property of the citizens of Jersey City and the metropolitan area might have reached the proportions of the Black Tom disaster of 1916."* The message further said that radio warnings issued during the fire caused *"a feeling of panic and nervousness among our citizens which was not allayed for many hours after the danger had passed."*

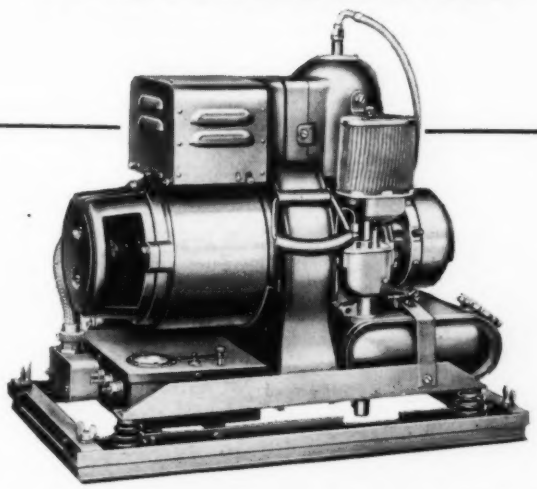
There is a war on. Attendant upon the war effort is the movement of munitions and combustibles, by rail, road and ship. This quite naturally imposes serious hazards, and risks for the fire service. In some circles efforts have been made to bring about closer cooperation between the armed forces, transportation companies and the municipal fire services with the object of further reducing hazards growing out of the necessary transportation of munitions, but in the main, such efforts have proved fruitless. In some instances, where fire departments are notified of serious hazards connected with the loading or unloading, or the movement of explosives or other flammables special protection has been provided. But generally, the fire service is kept in complete ignorance of all such hazards, and only learns of them when the crisis is at hand. That this country and its fire service will experience increasing hazards in this respect with possible disastrous loss of life and property, is a foregone conclusion. So long as the fire forces are kept in ignorance of actual or potential hazards, just so much greater is the potential danger to all concerned.

* * *

Hot Off the War Ticker

Deputy civilian protection directors of Westchester County (N. Y.) have asked President Roosevelt to draft sufficient workers from Selective Service rolls to provide essential personnel for civilian defense forces. . . . In Elizabeth (N. J.) three false yellow "fake" air raid signals were received by three separate groups. . . . In the new fire guard service advocated by the U. S. Office of Civilian Defense, James M. Landis, Director, says that women will be recruited as regular members of fire guard squads despite the fact that fire guard work is considered dangerous and difficult. . . . Italian-born head of a Rochester (N. Y.) fireworks company and 6 aides have been indicted as saboteurs, accused by FBI of *"wilfully failing to properly load powder charges of grenades."* . . . In Santa Cruz (Calif.) an ancient hose cort, used before the days of horse drawn fire carts, has been resurrected and placed into service for protection of the city wharf. . . . United States soldiers and the Veterans' Guard of Canada helped firemen fight a film blaze in Georgetown (British Guiana) which burned one woman to death. . . . In Connecticut, commercial trucks transporting war material may now use the Merritt and Wilbur Cross Parkways. The State's legislature authorized change as war measure, partly to take munitions loaded trucks off Boston Post Road, and thus outside the congested area of many communities. . . . In Brooklyn (N. Y.) hail of ma-

You're Still Buying HOMELITE PORTABLE GENERATORS ...but they're going to the Armed Forces

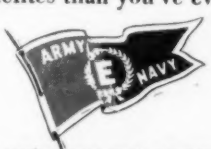


For the past three years practically every Homelite Portable Generator that has come from our production line has gone to the Armed Forces of our country.

Who's paying for it?

Why, it's you. It's every man, woman and child that is investing their money in War Bonds. Your War Bond money is being pooled to buy the greatest force for freedom the world has ever known. It's buying everything our country needs to win. It's doing the necessary job.

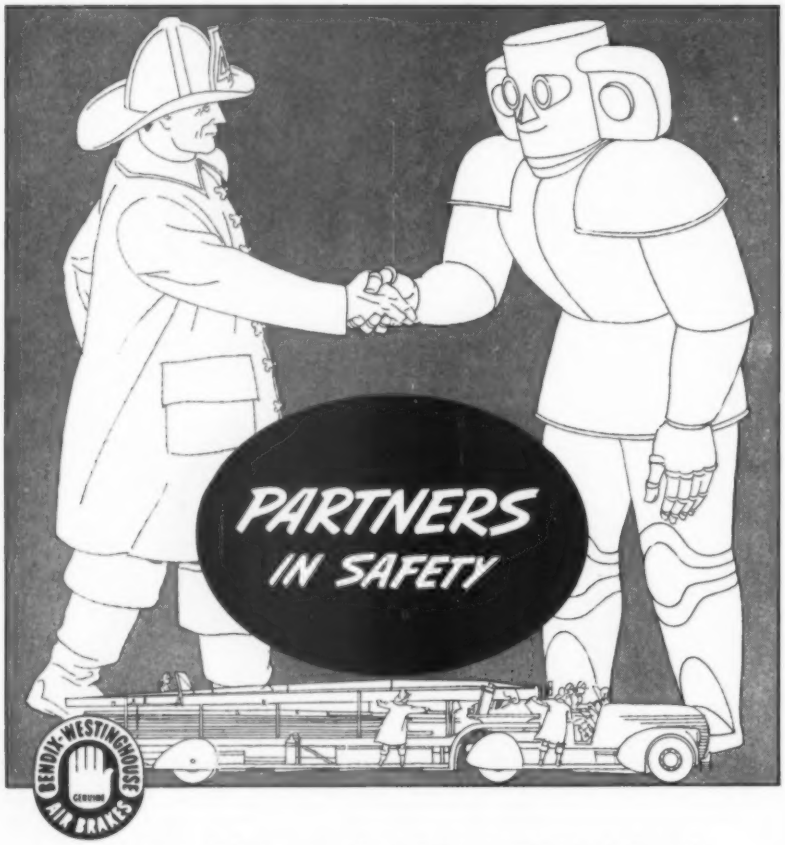
You've bought Homelite Portable Generators before, for yourself. You're buying them now for your country. But again, after peace, you'll buy them for yourself . . . and they'll be better Homelites than you've ever had before.



Every Homelite worker is regularly buying War Bonds. More than that, every Homelite worker is working tirelessly to help win and end the war soon. Their efforts have earned a high award . . . the Army-Navy E.

HOMELITE CORPORATION

PORT CHESTER, NEW YORK



It's your job to see that fires are prevented and extinguished. It's our job to get you there safely. Today's high speed vehicles demand quick-acting, perfect control. When you specify genuine Bendix-Westinghouse Automotive Air Brakes, you have chosen the ultimate in economical and dependable control. Contact your nearest Authorized Distributor or write to the Bendix-Westinghouse Company for information concerning the many exclusive features of our equipment for fire-fighting apparatus.

BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE CO.
ELYRIA, OHIO

EDDY
Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience goes into their manufacture and they embody valuable and exclusive features.

Write for the FACTS.

EDDY VALVE CO., Waterford, N.Y.

chine-gun bullets from a mysterious low-flying airplane smashed into three apartment buildings and rattled off pavements of Park Slope Section. No one injured. . . . Special police patrols were used to augment regular patrols in Bronx (N. Y. C.) when a series of fires of doubtful origin aroused suspicion of fire officials. . . . Fire, which broke out in N Y A building at Des Moines, gave the Brothers under Chief Charles Slade a stiff workout. . . . New York's new Governor Dewey has refused to lift the age limits of firemen. Petition had been made to let men of 35 enter departments. . . . An unidentified soldier lost his life in fire in which five were hurt, and 20 escaped, in burning of hotel in Biddeford (Me.) . . . Mr. George S. Van Schaick has retired as director of the Office of Civilian Defense, Second Corps Region to return to private business. His successor is Mr. Sinclair Hatch who was formerly deputy director. . . . In London (England) air raid sirens which have wailed their alarm every time Axis raiders were in the vicinity will be sounded henceforth only in the event of *immediate* danger. Reason for change is that old system caused needless delays in war production. . . . The OPA has denied supplemental gas to air raid wardens, but volunteer firemen, among others, are still on the list for it. . . . When one man in the Chrysler tank arsenal was suspended for smoking contrary to rules, 500 employees went on strike, resulting in closing of plant, with 2,300 workers out. . . . Governor Dewey, New York, came out strongly for a *"safe July 4th,"* claiming that holiday fatalities are a *"national calamity."* Vigorous warnings that the U. S. might be subjected to aerial bombing by the Axis, this summer are being voiced by numerous army and defense officials. . . . To June 21, 15 persons have been convicted on charges of smoking on piers in Jersey City (N. J.), the latest being Anthony Alessi, 42, longshoreman, who got himself a 90-day sentence. . . . CBS shortwave listening station reports hearing a broadcast which said that the record forms filled out by all those who had been mobilized in Essen (Germany) were destroyed when the local labor office was burned, along with large part of city, as result of British air raid. . . . The early June report that a small Jap plane had dropped an incendiary bomb, starting a small fire in an Oregon forest, which was quickly subdued, was overlooked by most of us. . . . While New Jersey was undergoing its first daylight air raid alarm, a large tank exploded at the plant of the Glidden Company, chemical makers, in Hillside (N. J.). Much excitement, but little damage. . . .

* * *

The War in the Air

It is true that we have as yet not suffered any serious enemy attack on our shores, but nevertheless, the nation is "under fire" so to speak, *from our own armed forces.* The prodigious efforts to increase our air forces and to train them has brought to the nation added hazards, and to fire force of the country more work and greater risks. Almost every edition of our newspapers bears this out, as evidenced by these typical headlines from the "news of the day":

HUNTINGTON BEACH, CAL.: Four children were fatally injured, 20 others were hurt, five seriously, when a P38 Army pursuit plane crashed and exploded on the

beach here. The pilot parachuted to safety when his plane took fire.

WASHINGTON, D. C.: An army transport plane crashed and exploded near Saxe (Va.), killing five officers, some attached to the operations staff of the Army War College, and one non-commissioned officer.

LOUISVILLE, KY.: Three light training planes plummeted into front yards of an exclusive residential district of East Louisville, killing one flyer and slightly injuring five others.

SOUTHVILLE, MASS.: Flaming wreckage of one of two Army planes which were in collision at a high altitude fell into path of a passenger train, derailing the engine and five coaches, two of which caught fire. Fortunately none of 180 passengers of train were hurt. Intense heat from burning plane had spread the rails. Firemen were called from several communities.

CARIBOU, ME.: A. U. S. Army pilot, four members of his crew and four civilians were killed when Army plane crashed on a farm at Parkhurst Siding (Me.). Civilians were working on farm and were unable to escape diving plane.

WINDSOR, N. S.: Four British imperial flyers died when their Hudson bomber exploded and crashed while on routine flight.

LONG ISLAND, N. Y.: Two planes crashed and burned within few minutes of each other on Long Island. Pilot of one, a Britisher, was badly burned. Pilot of other escaped by parachute but had to be rescued from tree by fire department. One plane set fire to a barn, but fire was quickly extinguished.

COLUMBIA, S. C.: Seven men narrowly escaped death when their medium bomber crash-landed with wheels up in a field and then caught fire and burned.

HOWARD, S. D.: Ten men were killed when two airplanes were in collision near here. One plane fell in flames, killing entire crew; other plane landed safely but eight were injured.

Twelve Buses Burn in Fire in Bay City

Fire, following explosion of gasoline storage tanks, on July 21 destroyed the garage of the Balcer Brothers Motor Coach Company and twelve buses in Bay City, Mich. This loss represented one-third of the city's mass transportation facilities.

The first of a series of explosions occurred soon after midnight among gasoline tanks containing about one-fifth of their 10,000-gallon capacity and while 5,000 gallons were being poured into them.

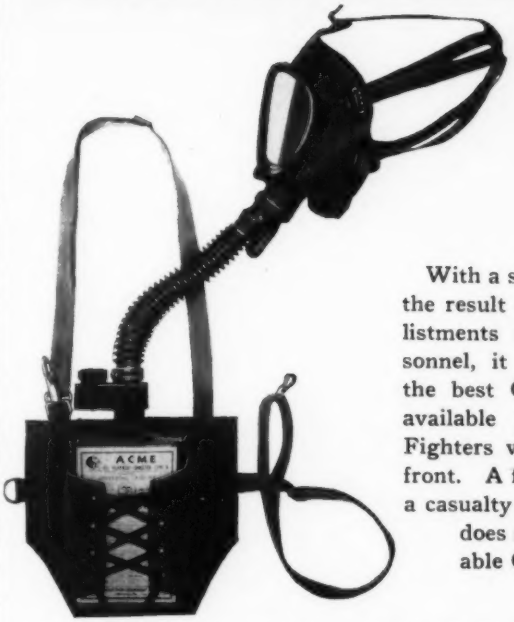
The blast set fire to the office portion of the structure, and as the flames were fed by exploding oil drums the building's side wall and its wooden roof collapsed. Firemen fought the blaze for two and a half hours.

Chief Joseph Trudell said that an investigation disclosed a combination of circumstances responsible for the fire.

Escaping gasoline fumes from one of the tanks which was being filled from a transport truck apparently were ignited by a stove in which refuse was being burned, the Chief said.

The driver of the transport was making his first delivery to the garage and was unaware that a vent inside the garage had been left open. Ordinarily a hose is attached to the vent and extended through a window while deliveries are made.

MISSING in ACTION
On the HOME FRONT



IS BAD NEWS

With a shortage of man-power, as the result of wartime draft and enlistments of fire department personnel, it becomes necessary that the best Gas Mask equipment be available to safe-guard the Fire Fighters who remain on the home front. A fireman can easily become a casualty while fighting fires, if he does not have safe and dependable Gas Mask equipment.

In the manufacture of Acme Type FD FULL VISION All-Purpose Gas Masks, every precaution is taken to provide maximum Safety, Comfort and Service for the men on the Home Front. The loss of one essential fireman, through the use of a faulty gas mask, can easily decrease the efficiency of the entire fire department.

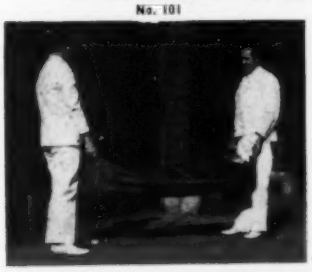
The Acme Type FD FULL VISION All-Purpose Gas Masks and Canisters, provide firemen with protection against Carbon Monoxide, Acid Gases, Organic Vapors, Ammonia, Toxic Smokes, and Fumes.

Every fireman's life is worthy of the BEST Gas Mask—ACME.

WRITE FOR PRICES and LITERATURE

ACME PROTECTION EQUIPMENT COMPANY, INC.
Manufacturers
3616 LIBERTY AVENUE Cable Address: ACMEPROCO PITTSBURGH, PA U.S.A.

Reeves
FLEXIBLE STRETCHERS
No. 101



Every casualty, no matter how slight or how serious, can be made worse by rough, improper handling. Reeves Stretchers can be used in the most inaccessible places.

If your dealer cannot supply you, write to:

A. SMITH & SON, Inc.
1237-39 RIDGE AVE.
PHILADELPHIA, PA.

$14.50

TO AIM AT FIRE!

Somewhere in the tropics . . . somewhere in the arctic . . . at battle stations all over the globe, our fighting men are ready to meet and defeat an enemy that's just as treacherous as the Axis. That enemy is *fire*. And it's an enemy that's being conquered quickly, decisively, with duGas fire-fighting equipment.

DuGas means quick blackouts to fierce fires, for duGas compound releases huge blankets of fire-smothering gases that hurt nothing but flames. And duGas is *always* ready to "fire" at fire . . . won't harden, freeze, evaporate or go stale.

Until victory, of course, the armed forces have first claim on duGas compound and fire-fighting equipment. But after the war is won there'll be plenty of duGas products to fight fire for you—and for all American industry.

duGas

FREE—New chart showing characteristics of all types of approved hand fire extinguishers. Write for copy today.

DUGAS ENGINEERING CORP.
OWNED AND OPERATED BY
ANSUL CHEMICAL COMPANY, MARINETTE, WISCONSIN

The Watch Desk

(*Continued from page* 508)

"sidewalk chiefs" who, in turn rushed the firemen. Police, called, rushed in also to quell the disturbance. Un huh—in the fracas Mr. Robert's house burned down!

* * *

Baked Apples To Order

The month's "Ripleyesque" comes from Dromana (Australia) where we are told men who fought a grass fire that was sweeping through an orchard were rewarded for their labor. After the fire an apple tree was found where the grass had not been tall enough to injure the tree, but where heat from the flames had baked all the apples on the tree to just the right degree for eating.

Oh well, d 'you want yours served with cream?

* * *

Hot Firehouse

We owe apologies to Chief A. M. Fichtenmueller, Danville (Calif.) for not sooner printing his story about the fire in Danville's firehouse. The Oakland papers carried the yarn, which went like this:

"As Mrs. Viola Root, Danville's telephone operator, walked to work at 6 a. m. . . . she saw smokes issuing from the Danville firehouse. She hurried to her switchboard and rang up Fire Chief A. M. Fuchtenmuller.

"What's cooking—in the firehouse?" she asked.

"Why nothing I know of," said the chief. *"Why?"* Mrs. Root told him.

"Better ring the boys," said the chief. *It might be a fire."* It was— a slow one, burning in the wall of the Fire Department Social Hall. The department mobilized smartly and put it out. *"The telephone company'll hear about this,"* the chief promised Mrs. Root. Then he added proudly: *"We had a good turn-out, didn't we?"*

Damage, including the chief's shine, was $150.10.

* * *

Hot Off the Tape

A fire in Harpersfield (N. Y.) destroyed 32 cows, team of horses and barn. . . . Fire, starting in 3-story frame house in New York City spread to All Saints Day Nursery, from whence nuns safely led 20 children aged 2 to 7 years old. . . . As sequel of Cocoanut Grove (Boston, Mass.) fire, women are urged to wear name-bracelets. It developed that none of the women casualties had anything on their persons which permitted immediate identification. . . . When 25-room house of Walter Reade, Deal (N. J.) burned, Deal firemen were aided by Braves from Asbury Park, Long Branch, Allenhurst and Oakhurst, all of N. J. . . . When theatre cooling system in Hyway Theatre, Fair Lawn (N. J.), exploded, Ronald Cooper, 40, asst. manager was fatally injured and six patrons were treated for smoke inhalation and shock. Firemen extinguished resulting blaze, while 800 patrons filed out of the theatre in good order. . . . Raymond Fritz, 35, chief of Middleport Vol. F. D. drowned when tractor he was operating slid down embankment and threw him

ON THE JOB 24 HOURS A DAY!

B-L Battery Boosters

Fully charged batteries at all times! Instant starting. Efficient operation of all electrical equipment and accessories on your apparatus.

Standardize on B-L Battery Boosters. Four models meet any requirement. All made with dry plate metallic rectifiers. No moving parts. Nothing to service. No interference with radio reception or transmission. Wall mounted.

Thousands of B-L Battery Boosters are in daily service keeping the batteries in all types of emergency and stand-by equipment fully charged.

Four Models — *for All Needs*

TYPE 506WM1C—(Illustrated). Equipped with charge rate indicating meter. Charges 6 volt batteries at rate of 10 to 5 amperes. Complete with AC and DC cords equipped respectively with plug and battery terminal clips. Protected against overloading by thermal circuit breaker. Manual reset. No fuses to burn out or replace.

TYPE 312WM1C—Identical with the 506WM1C for charging 12 volt batteries at a rate of 6-3 amperes. Equipped with all accessories as above.

TYPE 306WM1C—Similar to Type 506WM1C. Charges 6 volt batteries at rate of 6 to 3 amperes. Complete with all accessories as above, including charge rate indicator.

TYPE 416W2C—Charges 6 volt batteries at 4 to 2 amperes Complete with all accessories as above, except meter.

All types are for 50-60 cycle, 105-120 volt supply lines.

Available for prompt shipment on orders rated AA-5 or higher for essential use in accordance with current WPB limitation and conservation orders.

Write Today for Prices

BL ELECTRICAL PRODUCTS

The BENWOOD-LINZE CO.
1811-19 Locust St., St. Louis, 3, Mo.

into barge canal. . . . Fumes from burning lacquer knocked out 20 New York City firemen, including 2 battalion chiefs and 3 lieutenants. . . . Fire swept part of old homestead of the late Edwin Markham, the famous poet, in Staten Island (N. Y.) . . . A mysterious red glow over Newark (N. J.) had army, weather bureau, fire department and others mystified, and swamped with inquiries. . . . Orchids to unidentified truck driver, who drove his truck near burning residence in Franklin Lakes (N. J.), climbed to its roof and thence into second story of house, to rescue a 2½ year old baby whose father is with the army in North Africa—then quickly stole away. . . . In Manchester (Conn.) a lusty home run in a sandlot ball game scored a bull's eye on a fire alarm box. Sirens wailed, and three fire companies rushed to scene. Chief chalked up "one hit, one run, one error." . . . In Los Angeles, police and firemen hunted high'n low for a thief who had nerve and brass—he stole brass caps from more than 100 city hydrants. . . . From Watertown (N. Y.) comes account of how sun's rays filtered through a fish bowl owned by Avery Jenkins, focussed on a table and started a fire (Thanks, E. R.) . . . In Holly Hill (S. C.), riders in a stalled car suspected they'd run out o' gas. Un huh—they inspected the tank by matchlight. Car, belonging to Wm. Davis was total loss. . . . The fire loss at Clarinda (Ia.) in 1939 would have been almost nothing but for unfortunate blaze—of all places—in a fireman's dwelling. Total loss for year in town of 5,000 was $997 and when fireman Omer Willson's diggins got hot it accounted for $650 of that loss! . . . From Brother Sprague, in Philadelphia comes account of Stanley Verbeck who got an unexpectedly long "bird's eye view" of his neighborhood when a window sash fell and trapped him while he was cleaning windows in Falls of Schuykill (Pa.) No one else in home, so Stanley hadda hang there until firemen called by neighbor, extricated him. . . . Add to our "nutzbugs" department, the item from El Dorado (Kan.) which says that the City Commission has taken under advisement a petition from "the people." It was signed by the fellows who sit on the fire truck running-board in the fire station each noon to "chat." They (the "chatters") want the running boards equipped with cushions! **Ohmigosh!** . . . From J. W. C. comes item about baby in Goldsboro (N. C.) and its mother, who screamed frenziedly **"The baby's swallowed the pacifier."** To neighbors, the cry sounded like **"the house is on fire"** and they forthwith summoned the Braves—15 of 'em, with three pieces of apparatus, who, upon investigation, found the pacifier and helped get it "unswallowed."

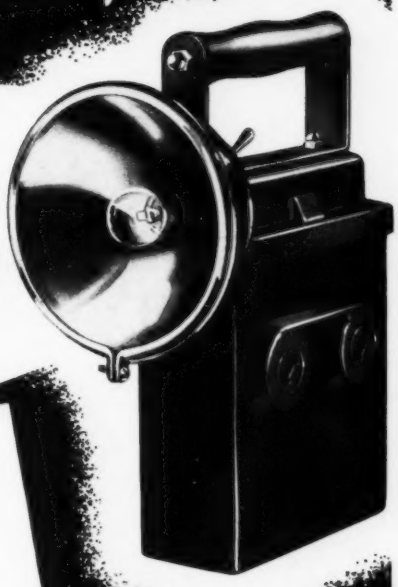
Gloves Go to War and Save Lives

Gloves, like every other item of clothing, have now to undergo a rigid test of efficiency to justify their manufacture. But one type of glove recently perfected by the Royal Air Force has priority which insists on its immediate mass production. It will be soon standard equipment in this service with very important side uses in fire fighting in other spheres.

The glove, known as the Standard,

DEPENDABLE ECONOMICAL LIGHT
for any Emergency

THE NEW WHEAT Rechargeable Spotlight
MODEL 158



STOP WORRYING about DRY CELLS
Get a WHEAT Rechargeable Light

FEATURES

★ Weighs only 92 ozs. complete.
★ Positive "non-spill" Construction.
★ Simple to Charge and Water. No need to take Lamp apart.
★ Less expensive Operation than dry cells.
★ Light can be Focused and Directed as Desired.
★ Free use of Hands. Light carries conveniently on Shoulder Strap.

An invaluable addition to any department, because it increases efficiency and reduces accident risk.

WRITE FOR COMPLETE DETAILS

2500 FOOT BEAM
25000 CANDLE POWER
1000 HOURS OPERATION

Critical Materials Reduced to a Minimum to insure Availability

KOEHLER MANUFACTURING COMPANY, INC.
MARLBORO, MASSACHUSETTS, U. S. A.

SIRENU
SINCE 1908 — THE PIONEER COMPANY
EXCLUSIVELY MANUFACTURING SIRENS
PRECISION MADE • LONG LIFE • UTMOST IN DEPENDABILITY
THE SIRENO COMPANY

1" to 2½" female threads

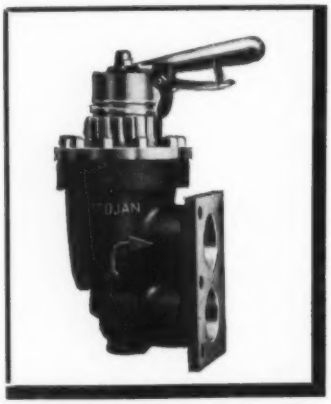
MODERN PUMPERS

demand these rugged, modern relief valves. Their simplicity and responsive dependability make them a must. Made in sizes from 1-*inch to* 2½-*inches* with capacities up to 1600 g.p.m. and pressures up to 750 lbs. Write for descriptive literature describing the complete line of

ROSS RELIEF VALVES

TRAILER PUMPERS

Trailer pumpers require valves made especially for this type of work, such a valve is the ROSS Trailer Pump Relief Valve. Made in sizes from 1-*inch to* 2½-*inches* with pressure adjustments from 10 lbs. to 750 lbs. and capacities from 0 to 500 g.p.m. at 120 lbs. pressure.



ROSS VALVE MFG. CO., Inc.
TROY, N. Y.

BOYER

Headquarters for

"DEPENDABLE"

FIRE APPARATUS AND FIRE DEPARTMENT SUPPLIES

★

FORTIFY FOR
FIRE FIGHTING

★

BOYER FIRE APPARATUS CO.

LOGANSPORT **INDIANA**

after the company responsible for its production, is packed in a small fireproof and waterproof container and is regarded in the RAF as the most modern method of burn treatment. Within a few seconds of burning, the Standard glove can be pulled on and much of the dangerous effects of burning mitigated. Made of oiled silk, it excludes air and contains antiseptic and curative powers. The precise composition of these curative compositions is not disclosed but they are understood to be of a jelly type of material which like soapy materials is known to have curative values. A glove so impregnated would obviously have the double value of excluding air and starting immediate restorative processes. Also in the pack are morphia, wound dressing and a tube of anti-burn jelly.

After a very drastic tryout by the RAF at their own hospitals, this anti-burn kit for airmen was generally approved and has since been given civilian tests at the Middlesex Hospital. The aim of the pack is to allow the patient when burned to treat the injury himself and at once to avoid the pain and infection which result, and to allow continued mobility with self treatment. A film is being made to educate RAF instructors and personnel in the use of this latest method.

Quite apart from this initial value as a flying kit, the gloves have obvious value as a peacetime standard item of equipment in fire fighting, first aid, medical and other emergency purposes, and should materially assist all who run the risk of fire by adding immediate glove first aid to the list of existing treatments.

ROBIN WALKER

Convention Dates

Aug. 16-21 — PENNSYLVANIA FIREMEN'S TRAINING CONFERENCE. Fifth annual meeting. Lewiston, Penn. Secretary, Chief Charles E. Clark, Box 271, Wayne, Penn.

Aug. 17-19—INDIANA FIRE SCHOOL. Annual meeting, Indianapolis. Director, Dean W. A. Knapp, Purdue University, Lafayette, Ind.

Aug. 24-27—KENTUCKY FIRE SCHOOL. Annual meeting. Owensboro, Ky.

Aug. 24-27 — DOMINION ASSOCIATION OF FIRE CHIEFS. Annual meeting, St. Catharines, Ont. Secretary, Chief James Armstrong, Box 56, Kingston, Ont.

Aug. 25-26—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. Annual meeting, Reno, Nev. Secretary, Ivy W. Stevens, 1014 Merchants Exchange Bldg., San Francisco, Cal.

Aug. 26-27—CONNECTICUT STATE FIREMEN'S ASSOCIATION. Sixtieth annual meeting, Hartford, Conn. Secretary, John Moehring, 56 Toms Road, Samford, Conn.

Aug. 31-Sept. 3—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual meeting. Chicago, Ill. Secretary, Chief Daniel B. Tierney, Arlington, Mass.

Sept. 6-10 — WESTERN PENNSYLVANIA FIREMEN'S TRAINING INSTITUTE. Annual meeting. Pennsylvania State Teachers College, California, Pa. Secretary, Chief Henry Neill, Box 83, Vestaburg, Pa.

Sept. 18—NEW JERSEY STATE FIREMEN'S ASSOCIATION. Soldiers' and Sailors' War Memorial Bldg., Trenton, N. J. Asst. Secretary, Fred A. Trowbridge, Morristown, N. J.

Sept. 21-24—CALIFORNIA STATE FIREMEN'S ASSOCIATION. Annual Meeting, Sacramento, Cal. Secretary, H. E. Strasser, 2046 Oregon Av., Long Beach 6, Cal.

Sept. 27-29—INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual meeting, New York, N. Y. Secretary, Irvin Shulsinger, 8 East 41st Street, New York, N. Y.

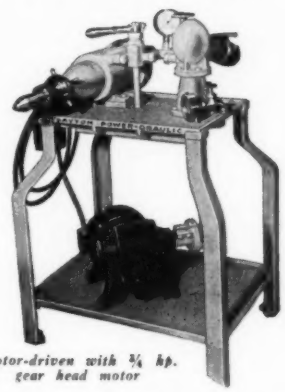
Oct. 5-6—FIREMEN'S ASSN. STATE OF PENNSYLVANIA. Annual meeting, Scranton, Pa. Secretary, Chief Charles E. Clark, Box 271, Wayne, Pa.

SAVE YOUR HOSE

Cooperate With The National Rubber Conservation Program

use a

DAYTON POWERDRAULIC



Motor-driven with ¾ hp. gear head motor

Now, with our armed forces all over the world on the march to victory, it becomes increasingly necessary that we on the home front to do our part.

Conserve your hose, it's valuable and hard to replace. Take good care of it, this care can be obtained by using a DAYTON POWERDRAULIC EXPANDER. This expander automatically tests hose up to 700 lbs., expands any coupling whether it be a small ¾" size or a large 6" suction size and removes old ring (by extra attachment) from couplings without using hammer and chisel.

★

Come in and see us at the

I.A.F.C. WARTIME CONFERENCE

at CHICAGO

★

Send for illustrated bulletin.

DAYTON FIRE EQUIPMENT CO.

1242-48 W. 2nd ST., DAYTON, O.

Chief William Orman in Armed Forces

Fire Chief William R. Orman of Basic Magnesium, Inc., Gabbs Valley, Nev., has exchanged his white cap with the five bugles for a plain khaki cap. Chief Orman was inducted into the Army at Fort Douglas, Utah, on May 5. At the time of his induction he headed the fire department of the biggest magnesium mine in the world. His department protects not only the giant magnesium mine but the million dollar town site recently built for workers and two adjoining properties, one owned by Henry J. Kaiser, and a nearby village of 350 people.

Chief William R. Orman

Chief Orman established the mine's fire division following his work as organizer of Basic's Fire Department at Las Vegas, which is probably one of the largest industrial fire departments in the world.

Chief Orman started his career at the age of seventeen as a volunteer with the North White Plains, N. Y., Fire Department.

He was active in the establishment of the industrial fire department at the Northrup Aircraft factory at Hawthorne, Cal. During his tenure with the company he invented one of the first magnesium extinguishants.

He organized the Aircraft Fire Prevention Engineers' Association, Western Division, and served as its first president. He served on the Advisory Council of the California State Council of Defense, as chairman in charge of Objective Seven, which was responsible for organization and training of fire brigades in industrial plants.

At the request of Fire Chief Case of Las Vegas, Nev., Chief Orman served as instructor of OCD fire personnel of Clark County. He also headed up OCD activities in Mineral County, Nev.

Great Lakes Chiefs to Hold Meeting

The Great Lakes Association of Fire Chiefs will hold a meeting on Monday evening, August 30, at the Palmer House in Chicago, in connection with the convention of the International Association of Fire Chiefs. A business meeting will also be held during the session to elect officers of the Division.

Fyr-Fyter is saving millions of pounds of critical copper and brass for weapons of war in its production of Fyr-Fyter extinguishers for essential war needs. A new Fyr-Fyter 2½ gallon Foam Extinguisher is now built of hot galvanized steel with electrically welded seams. The inner container is also made of steel, porcelain-enameled inside and out. It bears the approval of the Underwriters' Laboratories and carries an AES A-1-B-1 classification.

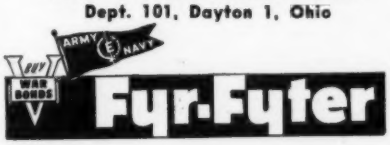
Another new Fyr-Fyter Pump Tank Type Extinguisher is also built of hot galvanized steel. The pump is made of steel tubing, porcelain-enameled. It is available in 2½ and 4 gallon sizes. Approved by the Underwriters' Laboratories with an AES A-1 classification.

AVAILABLE ONLY ON PREFERENCE RATINGS

Like all extinguishers, these new Fyr-Fyters are available only on orders bearing preference ratings. When Victory is won, we will have an enlarged and improved line of extinguishers available for all civilian needs. Remember Fyr-Fyter. You will have obsolete, worn-out equipment you will want to replace as soon as the war is over.

THE FYR-FYTER CO.

Dept. 101, Dayton 1, Ohio



"The Superior"
A MODERN and PROVEN
LIFE NET

more in demand than ever

SUPERIOR Life Saving Nets — always popular — are now more in demand than ever. Intelligent fire chiefs are fully aware of the greater strength (tested to 1800 lbs.), greater safety and longer lasting qualities of the "Superior" life net.

The direct pull shock absorber system eliminates all friction. Its greater resiliency insures a safer, easier landing.

Made of Chrome Molybdenum steel, the frame may easily be folded for storage in a matter of a few seconds.

Don't risk lives—insist on SUPERIOR Life Nets—get the best the field affords.

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TRAINING DUMMIES

William Moeller
Designer Consultant

SUPERIOR
FIRE EQUIPMENT
CORP.
235 E. 42d St., New York, N.Y.

Manufacturers' Announcements

(*Continued from page* 519)

Harry T. Armington in Service

Harry T. Armington, who has been associated with the Armington Manufacturing Company of Sycamore, Ill., for

Captain Harry T. Armington

the past fifteen years, is now in charge of procurement and inspection of fire equipment for overseas and army camps.

He was called to Washington in January, 1942, and was assigned to the Fire Protection Section of the Engineers Corps under W. W. Dean. In July, 1942, he was inducted into the U. S. Army and assigned to the Third Service Command, Baltimore, Md. He now holds the rank of Captain.

Paul Rauff of Cardox Dies

Paul A. Rauff, District Manager for Cardox Corporation for Ohio and western New York, died July 28 in the crash fire of a commercial airline plane near Bowling Green, Kentucky. Mr. Rauff, whose headquarters were in Cleveland, was 33 years old and an alumnus of the University of Michigan.

Mr. Rauff had been working extensively on the problem of fire protection in relation to aviation. When the accident occurred he was flying to a meeting with aeronautical engineers for consideration of improved methods of extinguishing airplane fires.

Mr. Rauff's untimely death is a challenge to industry to carry through to completion the work he was doing to reduce to a minimum the loss of life by fire in aircraft.

A False Alarm of Mysterious Origin

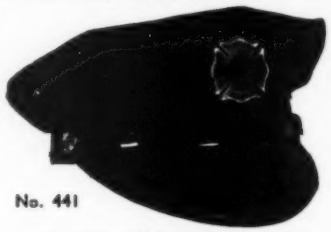
Volunteer firemen of Potsdam, New York, answered a false alarm recently with a rather mysterious aspect. The call from box 27 came thru at 12:30 p.m. when Lloyd K. Rusaw, a member of the department, was passing by the box. Stopping to count the signal, he was a little surprised to discover the call coming from the box near him. Firemen, after an investigation, theorized that a high wind blowing at the time had caused a short circuit, resulting in the call.

SANFORD D. DEWEY

WENTWORTH
FIREMAN'S UNIFORM CAPS
UNION MADE PROMPT DELIVERY

No. 342

Wentworth Fireman Caps are made of the Highest Quality Standard Materials available and by the Best Skilled Union Craftsmen in all the New and Standard styles. Our 47 years of experience and skilled workmen guarantee you AMERICA'S GREATEST CAP VALUE in all WENTWORTH FIREMAN CAPS.

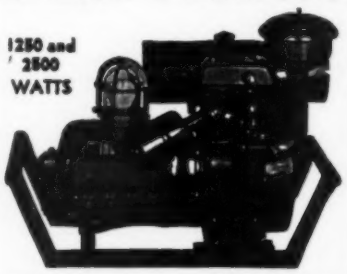


No. 441

Write direct for latest circular and prices or see your local dealer.

WENTWORTH-FORMAN CO., INC.
578b Washington St., Boston, Mass.
Manufacturers
Fireman Cap Specialists for Over 47 Years

"U.S."
PORTABLE
LIGHT PLANTS



This 1250 watt, portable unit has been designed expressly for fire department use. It is small, light, compact and equipped with carriers for easy portability out on the job. Air-cooled 4-cycle engine 2⅝" bore x 2⅝" stroke. 2.4 H.P. 2 gallon fuel tank. Quick starting. Also 2500 watt size.

LARGER SIZES AVAILABLE
Write for Catalog.
UNITED STATES MOTORS CORP.
430 Nebraska Street, Oshkosh, Wis.

Activities of Brighton Fire Department

The Brighton Fire Department, of Brighton, N. Y., a suburb of Rochester, consists of seventeen paid men and 100 volunteers. It is governed by a board of five fire commissioners headed by Charles F. Turton, Chairman.

Chief Walter J. Buckert

The equipment consists of one 750-gallon Ahrens-Fox pumper, two 600-gallon quadruple combinations, two 300-gallon Prospect pumpers and a Ford car.

The assessed valuation of the properties in the town is $30,401,630 and the exempt valuation is $340,670.

Chief of the department is Walter J. Buckert who has been a member for eighteen years, becoming Chief last January 1.

The department has obtained in the neighborhood of thirty to forty cups in the past ten years at conventions, etc. They obtained first prize in the State War Parade as the best appearing outfit.

Fire Prevention a War Measure

Although Philadelphia, Pa., had fewer fires in 1942 than in 1941, the number was greater than in any other previous year. No doubt, wartime conditions account to a considerable extent for the large number of fires. However, the war also makes the prevention of losses of supplies, equipment, housing, and other resources by fire equally important.

Records of the causes of fires, the occupancy of the buildings involved, the insurance coverage, the financial losses sustained, and other details regarding fires are maintained by the Fire Insurance Patrol of Philadelphia. These records show that Philadelphia had 9,468 fires in 1942, 10,863 fires in 1941, 8,220 in 1940 and 8,105 in 1939. Compared with 1941, the number of fires in 1942 was smaller by 1,395, or 12.8 per cent; but compared with 1940, the number was larger by 1,248, or 15.2 per cent. Except for 1941, the number of fires in 1942 was the largest for any year in the city's history.

Ever since matches were invented, carelessness in their storage and handling has been a prolific cause of fires. It is not surprising, therefore, that matches were found to be the principal single cause of fires in 1942—2,111 fires

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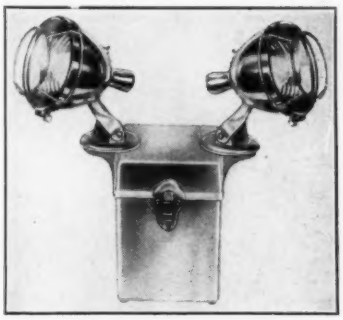
70 Types—*One for Every Need*

NOW—*The Automatic* "DUL"

Emergency Unit Lighting Systems—Battery Operated—Special Rechargeable Long-Charge Battery holds power for full year — Ready for instant automatic illumination of theaters, halls, night clubs, lodges and all places of public assembly. PREVENT PANIC AND DISASTER.



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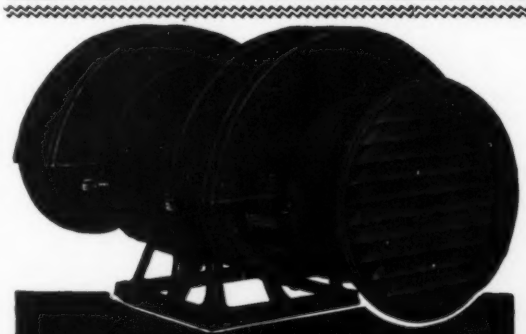

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GENERAL ALARM SIREN

You Can Depend On It *ALWAYS*

The Sterling Model "M" Siren, while primarily built for fire alarm signals, is particularly well adapted for the emergency duties attendant on National Defense.

This sturdy public alarm with its shrill, penetrating and distinctive vibrations meets and solves both problems.

Rugged and dependable — it is built to deliver 24-hour service. Its performance has never been equalled by any of the other sirens on the market today!

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PROTECTED RUBBER
FIRESUITS

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MANHATTAN
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THE MANHATTAN RUBBER MFG. DIVISION
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of the total of 9,468. However, the 2,104 fires which resulted from carelessness in smoking and in discarding cigarette and cigar stubs were a close second to matches. Defective electrical wiring and equipment caused 1,490 fires, but 1,042 of these occurred in automobiles and other motor vehicles on the streets. Fires which originated in rubbish totaled 825; 332 fires were caused by faulty chimneys, flues, and stacks; 279 were due to kerosene lamps and stoves; and 249 were started by fuel oil burners. The causes of 868 fires were not determined and are recorded as unknown.

Not all the fires in 1942 were in buildings; 4,363 fires, including 1,200 fires in automobiles and other motor vehicles on the streets, did not involve buildings. Of the 5,105 fires in buildings, 3,884 occurred in dwelling houses and 184 in apartments. Stores and warehouses accounted for 263 fires. Fires in garages totaled 66. Metalworking establishments had 60 fires, and textile plants had 40. Other major classifications include: vacant buildings (43 fires), offices and office buildings (39), restaurants (38), tap rooms (34), rag, paper and junk shops (26), hotels (25), and churches (21).

According to the records of the Fire Insurance Patrol, the losses suffered from fires involving buildings or their contents in 1942 amounted to $3,003,544. Of this total, $2,612,675 was covered by insurance — $1,124,736 for damage to buildings and $1,487,939 for damage to building contents. Losses not covered by insurance were estimated at $390,869. The classes of properties that had the most fires did not incur the largest losses. There were 3,884 dwelling-house fires, but the losses from these were only $296,106, whereas the 263 fires in stores and warehouses caused losses of $876,273. Fires in eighteen retail furniture stores entailed losses amounting to $298,106, and fires in three paper mills resulted in losses of $209,212.

It is obvious from the record that carelessness is a chief cause of fires, and that greater care with matches, in smoking, and in the use of electrical equipment, stoves, oil burners, and kerosene lamps will prevent many fires. Also, the record shows the need for proper care of rubbish and other combustibles which constitute a fire hazard. Finally, the record makes it clear that, in order to prevent fires, equipment (such as electrical wiring and fixtures) and structures (such as chimneys) which may cause a fire if they are defective must be maintained in good condition. Under wartime conditions, the prevention of losses by fire requires unusual alertness and care.

Reprinted from Citizens' Business published by the Bureau of Municipal Research, Philadelphia, Pa.

Deputy Chief Gailey Marks Fifty Years in Salvage Corps

Deputy Chief Frank Gailey of the Underwriters' Salvage Corps of St. Louis, Mo., rounded out fifty years of service on May 6.

Chief Gailey came to St. Louis in 1878 and joined the corps in 1893. During his fifty years in the service Chief Gailey has been on duty at most of the big fires in St. Louis. The Salvage Corps is not maintained primarily to extinguish fires, but to save lives and property. The men work alternate days.

JANESVILLE QUALITY
TURN OUT CLOTHING
Still Available

Our turnout suits are giving excellent satisfaction in most of the large fire departments throughout the U. S. and
THERE MUST BE A REASON WHY SO MANY FIREMEN INSIST ON JANESVILLE QUALITY
Rubber and Duck Coats and Bunkers, Boots, etc.
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SEALAND TRAILER PUMPS
These mobile trailers made in 150, 250 and 500 gallon units are powered with gasoline motors, carry 500 ft. of double jacket Fire hose, and may be equipped with 100 gallon booster tanks. Skid mounted units can be furnished. Pumps can be purchased without trailers.
THE SEALAND CORP.
Centrifugal Pumps—Fire Alarm Systems—Modern Fire Apparatus
Post Road & Maple Ave.,
P. O. Southport, Conn.

The Round Table

(*Continued from page* 504)

Some of the alarm boxes are connected to our municipal system, while others are private systems.

We do not feel that private alarm systems should be connected to the municipal system in any manner. Our experience has been that they cause the department to answer a large number of false alarms—of the honest mistake type.

George C. Graham, Chief, Bristol, Conn.: Fire alarm systems are required in schools, but not in other places of public assembly. These are not connected with the fire department alarm system. They cover requirements of the State Board of Education.

I believe these systems should be connected with the municipal alarm system. Too many times a delay in notifying the city department allows a fire to get a large start and a large loss results. The life hazard is also another point in favor of these hook-ups.

C. A. Crosier, Chief, Battle Creek, Mich.: Fire alarm boxes are not mandatory at schools, theatres, and other places of public assembly. Of the boxes in these places some are connected to the municipal alarm system while others are not.

I believe they should be connected in schools and theatres where proper maintenance electricians are maintained.

In schools where fire alarm equipment is interconnected, when an alarm is turned in, the building is emptied of students. The delay is less in the event of a fire.

A. F. Taylor, Chief, Richmond, Va.: Fire alarm boxes are not required in schools, theatres and other places of public assembly, but most of these buildings have boxes located inside. We would prefer that they be on the outside of buildings.

These boxes are not connected to the building alarm systems, but are connected to our alarm system.

C. C. Ralph, Superintendent Alarm Division, Portland, Ore.: We have very few master boxes, but have never experienced any trouble with those in service.

I believe that the master box should be connected to an automatic alarm system to get the utmost efficiency from it.

Edmund B. Lewis, Chief, Scranton, Penna.: We do not require fire alarm boxes at schools, theatres and other places of public assembly. Where there are such installations, the boxes are independent of the building alarm systems.

The advantage of interconnection of such private alarm systems to the municipal system through master boxes is the quicker transmission of alarms in case of fire. The saving of time may mean saving of life and property.

Walter S. Blanton, Chief, Savannah, Ga.: Fire alarm boxes are required at schools, theatres and other places of public assembly. These boxes are independent of the alarm systems of the buildings. I do not believe they should be connected to the alarm systems of the buildings.

The disadvantage of having the

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— Hale Fire Pumps are being made in greater quantities than ever before.

And Hale standards of workmanship are constantly maintained by the use of accurate, modern machine tools and production equipment, coupled with rigid inspection.

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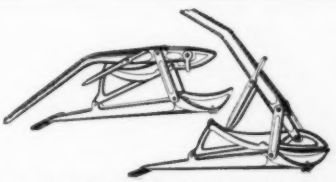
THE NEW PEERLESS HOSE CLAMP

Type E. The Result of 30 Years Experience in Hose Clamp Production

Demonstrated under Official Committee of International Fire Chiefs Convention at Toronto on a line from a pumper carrying 225 pressure and at Oklahoma City and New Orleans on 350 pounds hydraulic pressure. Witnessed by hundreds of Chiefs attending.



THE NEW PEERLESS HOSE CLAMP
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SIMPLE CONSTRUCTION
INSTANT APPLICATION AND RELEASE
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SAVES TIME — MEN — EFFORT
Making New Methods Possible.

APPLY CLAMP ON FLAT HOSE
Check Water—Carry the Line Up Ladder or into Warehouse Empty —Release Man at Hydrant to Help Handle Line.

SAVE TIME IN MAKING CHANGES
No Tracing of Lines — To Shut Down — Instead Use the Men to Make the Changes.

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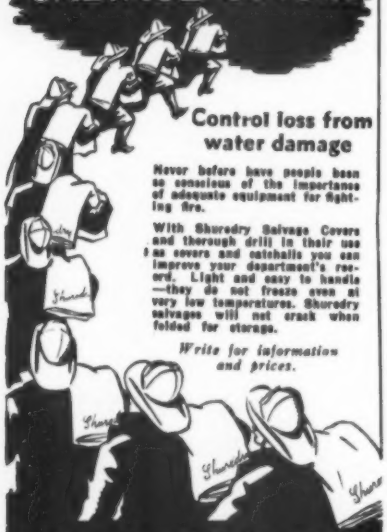

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alarm boxes in buildings in question is that they may be tampered with and probably cause unnecessary alarms to come in from time to time.

In Savannah, the firm alarm boxes are in front of the buildings in question, and it is only a matter of a very few seconds more to pull the regular alarm boxes.

Elmer F. Reed, Chief, Middletown, Ohio: Our schools have no fire alarm boxes or connections in or on them.

There is every advantage in interconnecting private alarm systems to the municipal systems through master boxes. It provides quicker contact with the fire department when they are handled properly and when someone is sent to direct the fire department up on its arrival.

W. L. Merlin, Superintendent of Fire Alarm, Atlanta Ga.: We do not require fire alarm boxes in schools, theatres and other places of public assembly. Those we have in service now are connected with the city fire alarm system.

I believe the interconnection of private alarm systems to the municipal system through master boxes is an advantage to the fire department when the system is properly supervised and maintained.

A. McC. Marsh, Chief, Columbia, S. C.: Our state law requires fire alarm boxes at schools and other places of public assembly. These boxes are connected to our municipal system. I do not believe they should be connected as it is more advantageous to use the municipal system.

C. C. Jennings, Chief, Tulsa, Okla.: It is our practice to place a box near all schools or places of public assembly. These are independent of the building alarm systems.

Whether these boxes should be connected to the building alarm system would depend on the type and maintenance of private systems.

Disadvantages of such interconnection are improper care and unnecessary, or false alarms. Speedier transmission of alarms is an advantage.

C. J. Henry, Chief, Lexington, Ky.: Fire alarm boxes are not required in places of public assembly in Lexington. There are, however, two private alarm boxes connected with our alarm system, one from the Greyhound Bus Garage and one from a tobacco redryer. Both are connected into sprinkler systems, the buildings not having alarm systems but watchmen.

In case of fire in a building you get an early alarm and are not dependent on a watchman or other hit-or-miss means of notification if such systems are connected to the municipal system. If installed properly and kept in good order, there are no disadvantages to such a connection.

William J. Mohr, Chief, Santa Monica, Calif.: The schools have connected to our system, but are not independent of our electric circuits. I am opposed to any further installations using this same system, and will insist that the schools maintain their own systems up to the master box.

I believe that connecting the private alarm systems to the municipal system through master boxes has a disadvantage rather than an advantage in that you arrive at the master box and have

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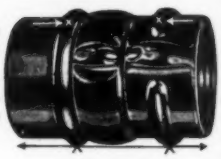
This installation shows the position of the rubber lining in BI-LATERAL FIRE HOSE when held in a flattened position between calls into service. This is why we can save a city one replacement, because this hose will give double service of any hose constructed under the old method.

Also we can load 25% more on the apparatus bed actually making an $8,000 truck loaded with Bi-Lateral construction, cheaper than a $7,000 one loaded with other construction.

Here's the new DROP-FORGED rocker lug coupling (not cast bronze) with the swivel protecting feature.



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Today — right now — there are many American communities and municipalities which sorely need additional fire fighting facilities to give their citizens adequate fire protection and are unable to secure these because of war conditions.

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THE HOME OF THE
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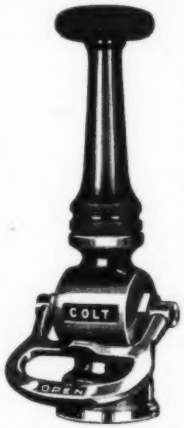

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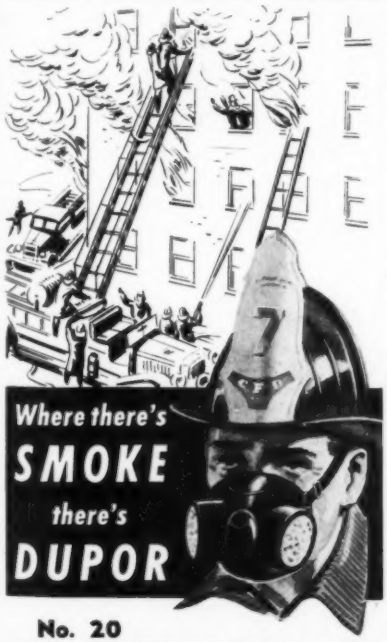

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SAMPLE sent for $2.25

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to search for the auxiliary box that was pulled.

John J. Tubridy, Commissioner of Fire, Buffalo, N. Y.: Fire alarm boxes are required by state law at schools, theatres and other places of public assembly. They are independent of the alarm systems of the buildings. I do not believe they should be connected to the alarm systems of the buildings.

Private alarm systems in these days are essential and are of the greatest help to municipal fire departments.

Edward J. Kerr, Chief, Pittsburgh, Penna.: Fire alarm boxes are located in as close proximity as possible to schools, theatres and other places of public assembly. With but one exception, they are not connected to the alarm systems of buildings.

Connecting private alarm systems to the municipal systems through master boxes, in my opinion, divides responsibility.

Zephrin F. Drouin, Chief, Lewiston, Me.: It is urgently recommended that fire alarm boxes be required at schools, theatres and other places of public assembly. Public schools and all the large institutions have master boxes and auxiliary boxes on each floor which are directly connected to the city system.

The advantage of having the private system connected with the municipal system through master boxes is that the department can get to the scene when the fire is still small.

On the other hand, as in the case of numerous fires in the cotton mills which maintain their own fire department, if the box in the mill were connected to the municipal system, the municipal fire department would be called out on many needless calls.

Thomas F. Cavanaugh, Chief, Waterbury, Conn.: Fire alarm boxes are not required at schools, theatres and other places of public assembly. Such boxes we have in operation are connected to the alarm systems of the buildings.

Auxiliary boxes allow for no delay. The transmission of the alarm from the point of the fire itself is most advantageous, in that one does not have to rush to another part of the building to send in the alarm.

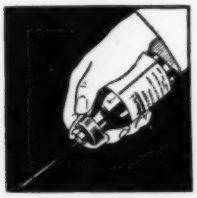
W. L. Ryan, Chief, Dubuque, Ia.: We do not require fire alarm boxes at schools and other places of public assembly.

My preference is to have a master box located outside the building with pull stations on the various floors.

Ernest G. Beckert, Chief, West New York, N. J.: Fire alarm boxes are required at all public and parochial schools. These boxes are independent of the school systems. Interconnection of private alarm systems to the municipal systems through master boxes might cause unnecessary alarms. There is also a lack of proper care by those in charge. Any abnormal condition of the school circuit would show up on the municipal circuit.

F. L. Campion, Chief, Fargo, N. D., reports that fire alarm boxes are required at schools, theatres and other places of public assembly, while Chiefs S. J. Flores, Shreveport, La.; W. G. Lutkey, Oakland, Calif.; R. Leedom, Portsmouth, Ohio, and L. B. Barnum, Phoenix, Ariz., report that they are not required.

TREAT BURNS
WITHOUT DELAY



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Promptness is vitally important in the treatment of burns. Gebauer's Tannic Spray in the dispenseal bottle is always ready for instant use. Stable, antiseptic solution forms pliable tannic film over affected area. Minor burns seldom require bandaging or dressing. Convenient. Economical. Literature on request.

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AUGUST, 1943

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Hanley Engineering Service	424-425
Harrington Signal Co.	538
Homelite Corp.	527
Janesville Apparel Co.	536
Kellam Mfg. Co.	537
Kerotest Mfg. Co.	419
Koehler Mfg. Co.	531
Ludlow Valve Mfg. Co.	430
M. & H. Valve & Fittings Co.	505
McIntire Brass Works, E. N.	525
Mack Mfg. Corp.	408-409
Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc.	536
Maxim Motor Co.	433
Midwestern Mfg. Co.	517
Mine Safety Appliances Co.	414
Morning Pride Mfg. Co.	536
National Foam System, Inc.	513
Oren Fire Apparatus Div. of Roanoke Welding & Equipment Co., Inc.	439
Pacific Marine Supply Co.	523
Pirsch & Sons Co., Peter	Inside Back Cover
Powhatan Brass Mfg. Co.	434
Quaker Rubber Corp.	539
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Republic Rubber Division of Lee Rubber & Tire Corp.	507
Rockwood Sprinkler Co.	429
Ross Valve Mfg. Co.	532
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Smith & Co., D. B.	415
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U. S. Motors, Inc.	534
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Waterous Co.	420-421
Wentworth-Forman Co., Inc.	534
Wooster Brass Co.	521

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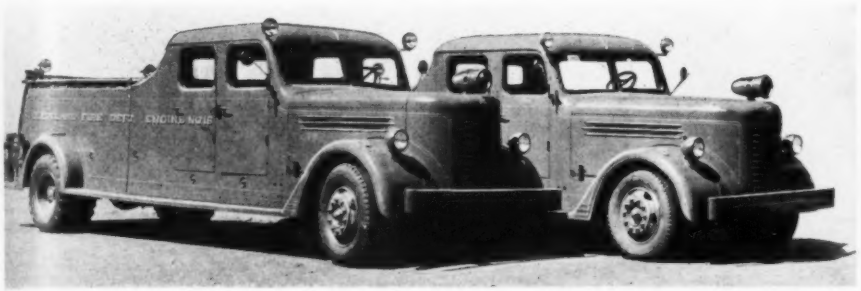

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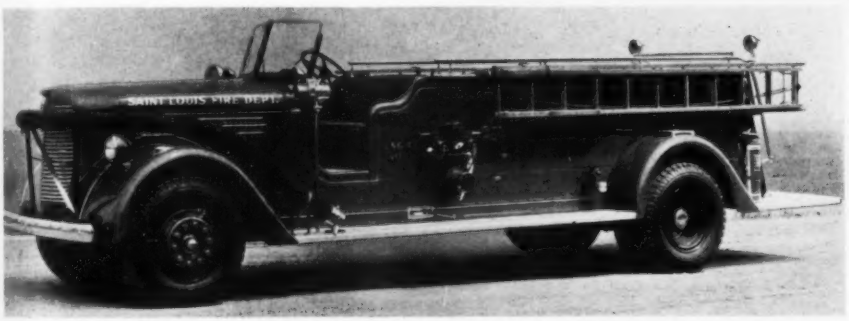
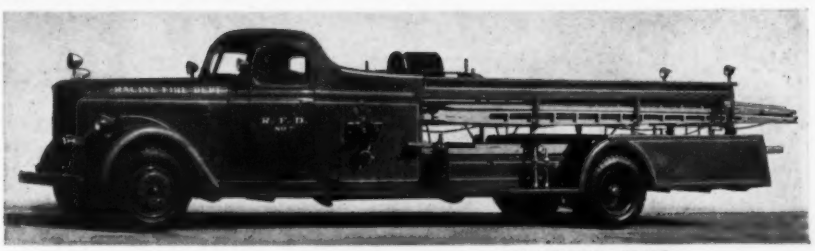
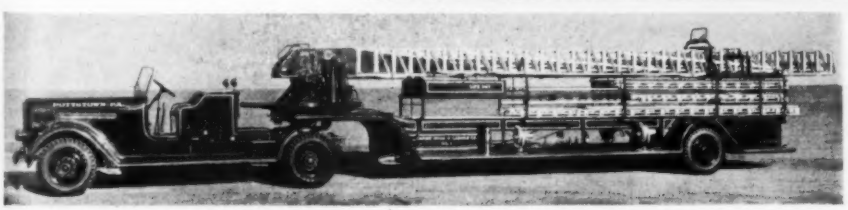
CHATTANOOGA, TENN.
2 - 750 GAL. QUADS



ST. LOUIS, MO.
1,000 GAL. PUMPER



RACINE, WIS.
750 GAL. QUAD.



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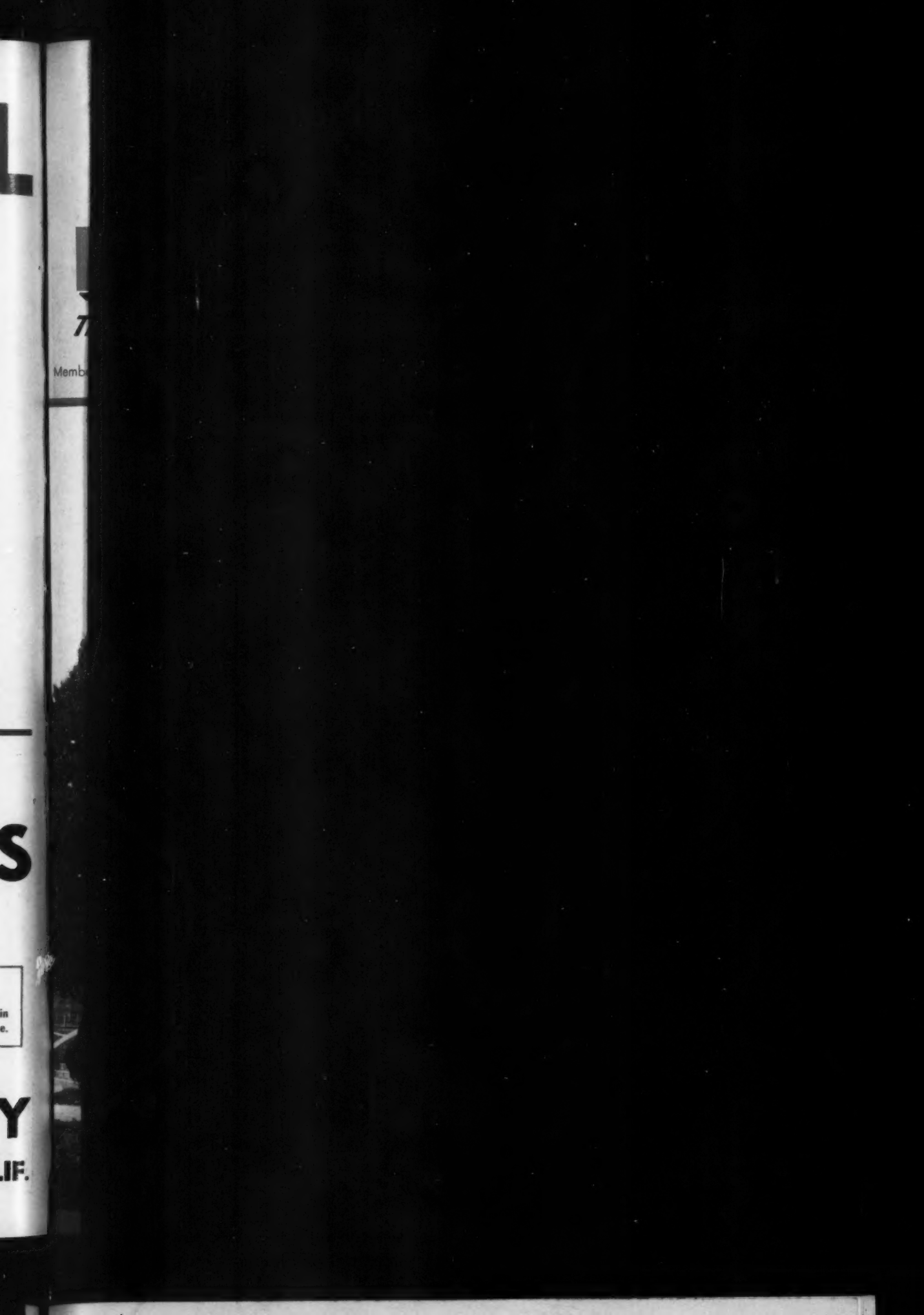
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